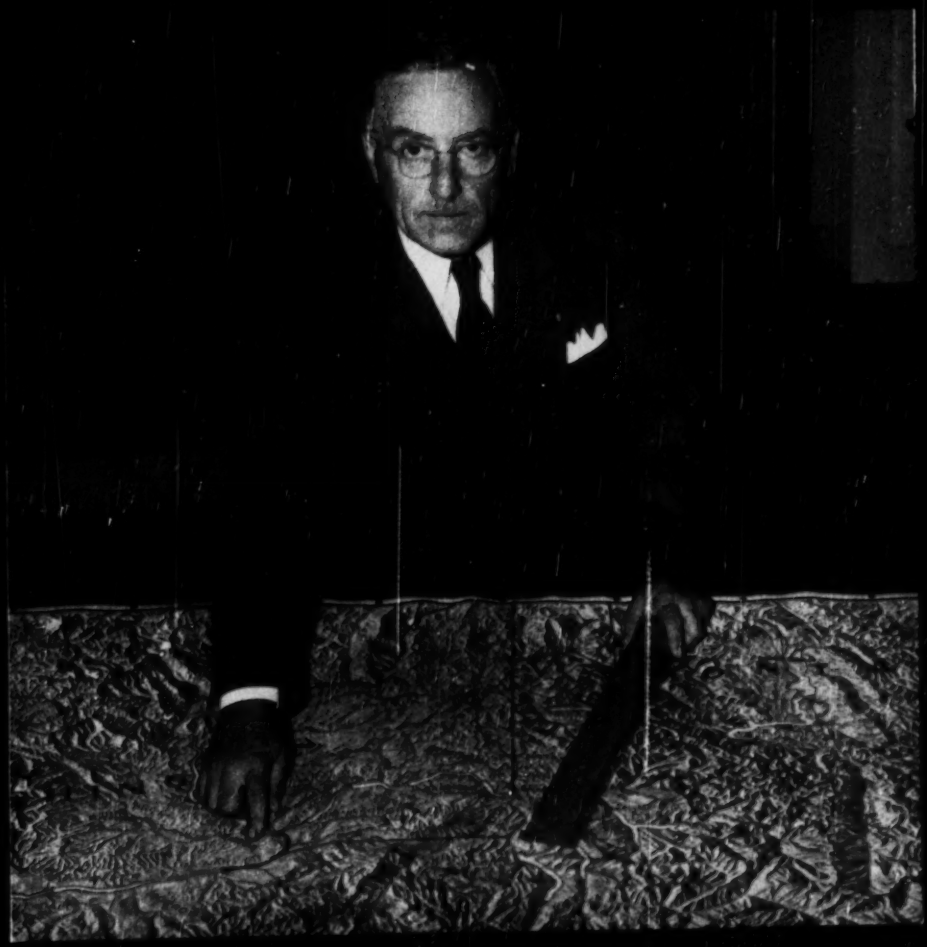
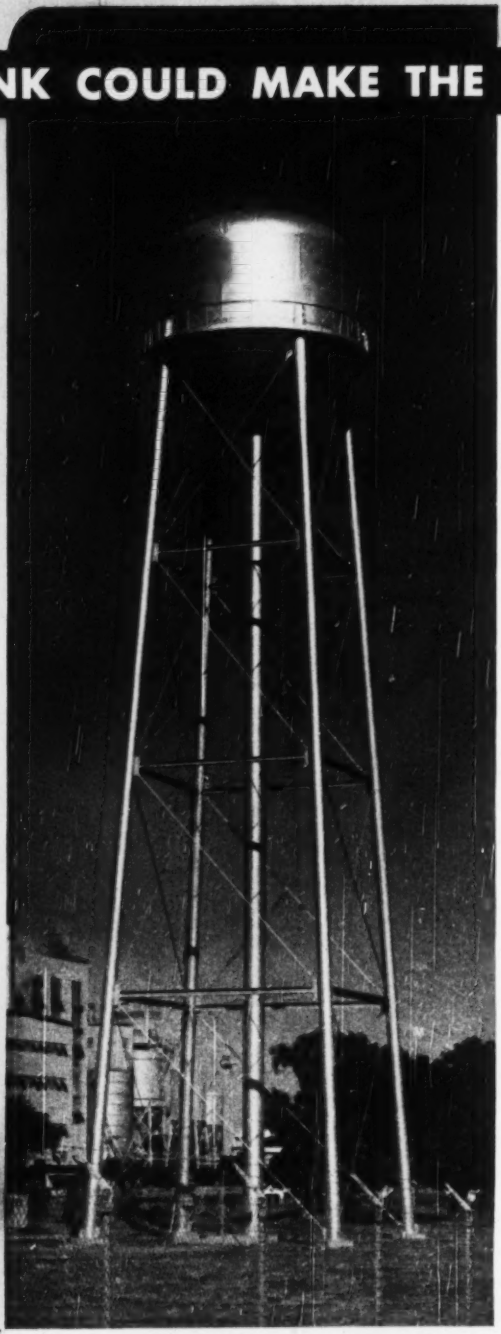
ENGINEERING NEWS-RECORD



A McGRAW-HILL PUBLICATION

THIS TANK COULD MAKE THE DIFFERENCE



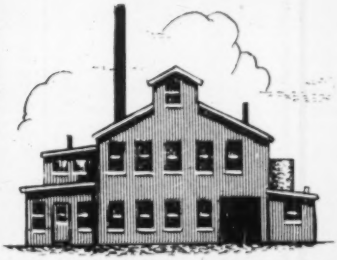
Last year, industrial fires caused millions of dollars worth of damage to buildings, equipment, and material. Scores of people were killed or severely burned. And the man-hours of work lost can't even be estimated.

That was 1949. But what about this year? Will the story be the same? The chances are it will, because some plants still neglect basic fire precautions.

Lack of an adequate fire protection system, an insufficient water supply, low water pressure, inefficient watch service at night . . . any one of these situations could mean disaster for your plant. So why take the chance?

Prevent such occurrences by installing an automatic sprinkler system plus a Horton elevated tank to provide the gravity water supply. Many plants throughout the country have found that this combination often makes the difference between a small blaze that is put out before it has a chance to gain headway and a serious fire. You can't afford to be without this protection.

When you are considering the installation of an automatic fire protection system, let us quote you on the elevated tank. We build ellipsoidal-bottom structures in standard capacities ranging from 15,000 to 500,000 gallons. Write our nearest office for complete details. There is no obligation.

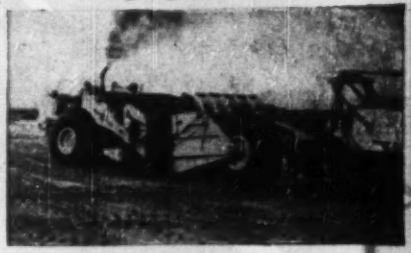


CHICAGO BRIDGE & IRON COMPANY

LAPLANT CHOATE

. . . the sure sign of more and more profitable earthmoving jobs!

HERE'S the sure sign of the extra yardage production that gets the job done faster and at lower cost on more and more jobs. Watch LPC Motor Scrapers in action . . . talk to the men who own them. Then ask your LPC distributor to explain *all* the big-production, high-profit features. LaPlant-Choate Mfg. Co., Inc., Cedar Rapids, Iowa—LaPlant-Choate Sales and Service, 1022 77th Ave., Oakland, Calif.



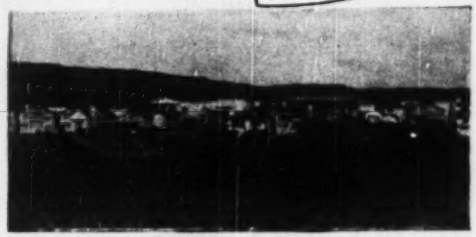
LAPLANT CHOATE

One of the ways J. Robert Bazley uses Motor Scrapers for coal stripping at Mt. Carmel, Pa.

LAPLANT CHOATE

Brown Construction Co. is piling up high yardage totals at Deming, New Mexico.

LAPLANT CHOATE



Henry Doejjer picks 4 Motor Scrapers to move 12 million yards of sand at Westlake, Calif.

LAPLANT CHOATE

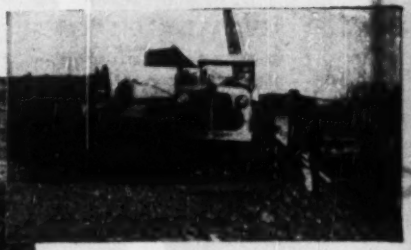
Two LPC Motor Scrapers are working for Bayer & Mingolla on the Route 2 by-pass, Leominster, Mass.

LAPLANT CHOATE

Four LPC Motor Scrapers are speeding operations on the Benbrook Dam for List & Clark, Ft. Worth, Texas.

LAPLANT CHOATE

For the Burlington Railroad relocation project at Chillicothe, Mo., Perry McGlone uses five Motor Scrapers.



LAPLANT CHOATE

Patterson Construction Company has three units working on the Pennsylvania Turnpike at Steelton, Pa.

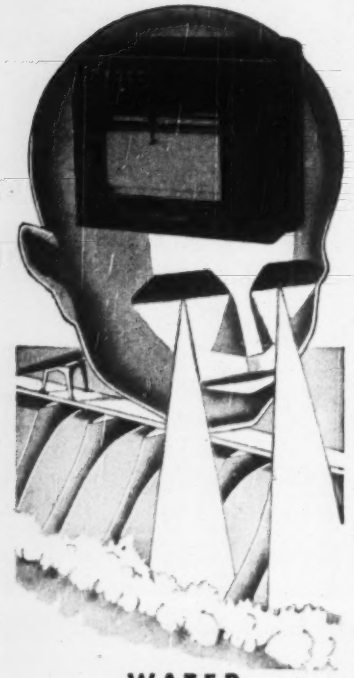
LAPLANT CHOATE

LPC TW-300 Motor Wagons

LPC Hydraulic or Cable Operated Dozers

LPC Rippers

LPC Tampers



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ENGINEERING NEWS-RECORD

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Volume 145 — OCTOBER 19, 1950 — No. 16

WALDO G. BOWMAN
Editor

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You can look to HUBER as world headquarters for all roller problems. The HUBER line, backed up by 87 years of manufacturing experience, meets every roller requirement.

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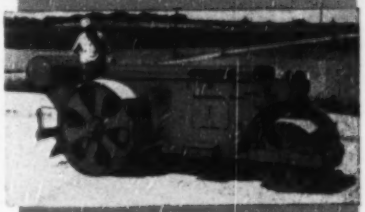

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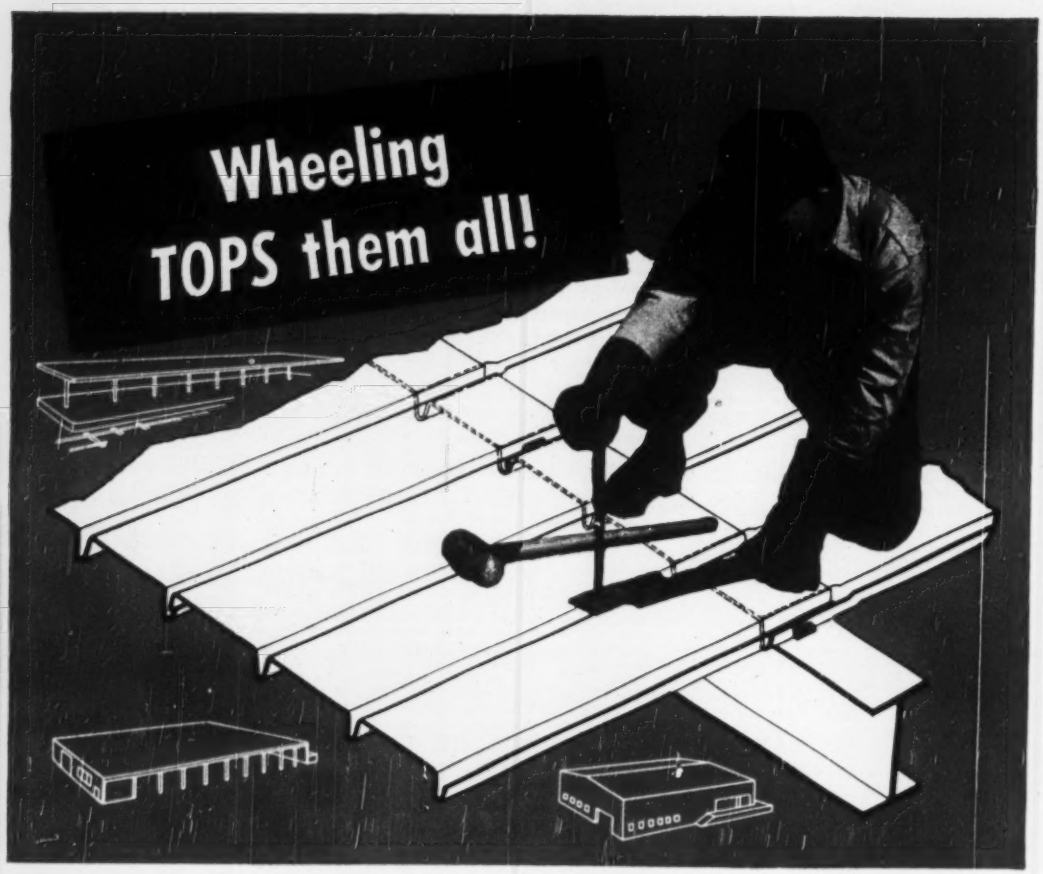

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Wheeling TRI-RIB Steel Roof Deck

is light-weight, durable, easy to install!

Engineers agree that Wheeling Tri-Rib Steel Roof Deck makes a top quality installation at down-to-earth costs. Adaptable to every type of building . . . private, public, commercial, industrial. Made of Cop-R-Loy, the Copper Alloyed Steel, to exacting Wheeling standards. Thousands of tons of Tri-Rib have been used in hundreds of different projects. (Designed in accordance with specifications adopted by A. I. S. I. for light gauge structures dated January, 1949.)

Tri-Rib gives an attractive, modern appearance to interiors, too. Can be painted easily. Write to Wheeling for full information about Tri-Rib Steel Roof Deck.

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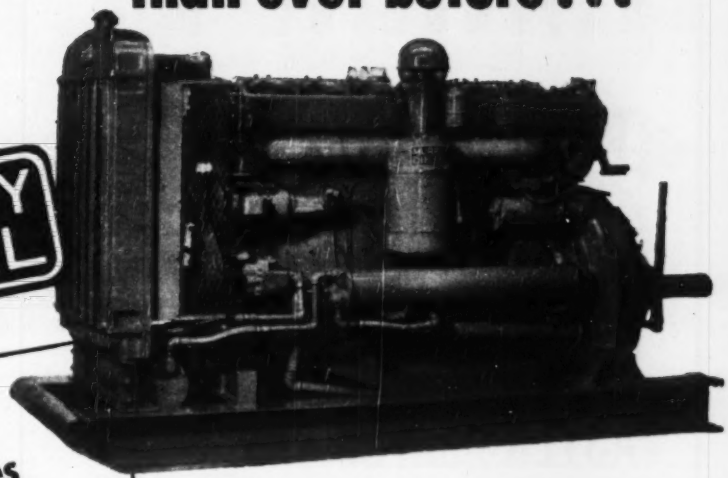

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- ✓ 1200 or 1400 RPM
- ✓ Generator Sets
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And only MURPHY offers all these design features:

- TRUE DIESEL OPERATION gets more work out of your fuel . . . minimizes wear and tear on the engine.
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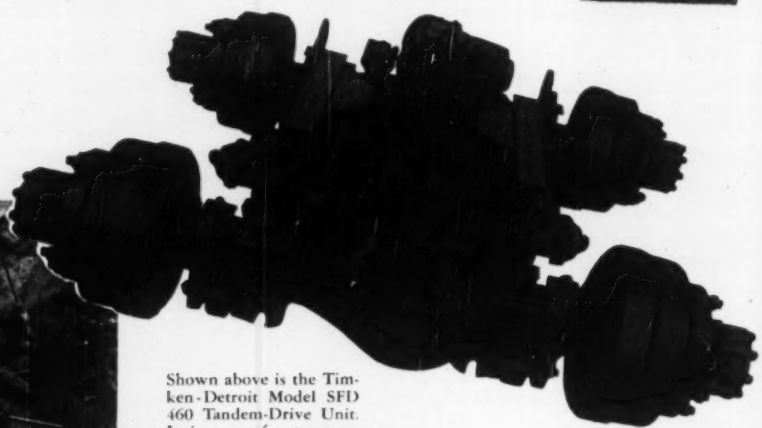
TANDEM-DRIVE UNITS HAUL HEAVIER LOADS FASTER • SAFER • AT LOWER COST!

For extra load-carrying ability plus extra tractive ability on tough construction jobs, make sure your trucks are six-wheelers and are equipped with Timken-Detroit Tandem-Drive Units. These rugged units are built for strength and durability and *proved* by years of on-the-job operation. What's more, Timken-Detroit Tandem-Drive Units have a positive *through-drive* that gears all four wheels to the road. This insures full use of high-power engines — results in increased tractive ability, faster material movement and reduced operating costs. Parallelogram suspension gives the easiest "ride" ever known.

It will pay you to specify Timken-Detroit Tandem-Drive Units on the next medium- and heavy-duty trucks you buy!

WRITE FOR THIS FREE BOOKLET TODAY!



Shown above is the Timken-Detroit Model SFD 460 Tandem-Drive Unit. It is one of numerous models which are ideal for road building, transit-mixed concrete hauling, lumber hauling, excavating work, truck crane and shovel service — wherever the load is heavy and positive pulling power is required.

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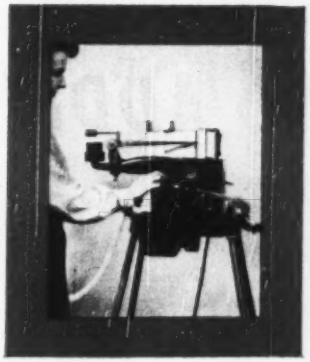
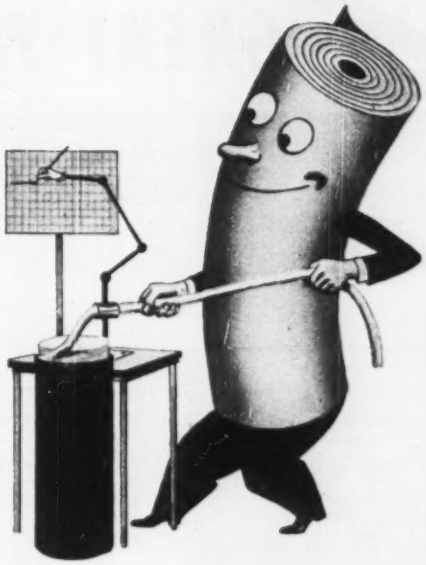


CHECKING EVENNESS OF SLIVER WITH LINEAR REGULARITY TESTER. One of a series of laboratory controls throughout production to assure fabric uniformity in all Mt. Vernon-Woodberry products.



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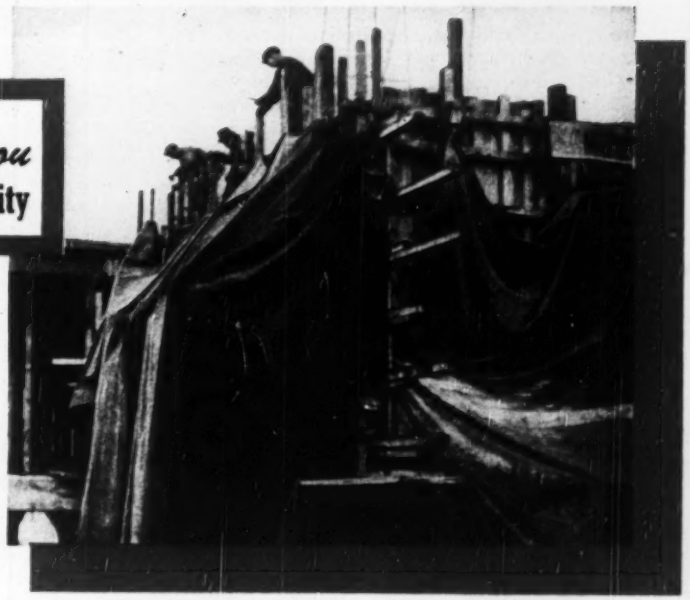
Makes the Big Difference

In TARPAULINS

MT. VERNON EXTRA

Gives You

Greater Fabric Uniformity



The greater uniformity of Mt. Vernon Extra Duck assures you the two most important qualities you want in tarps — top protection and top wear. You'll find your repair and replacement costs reduced considerably.

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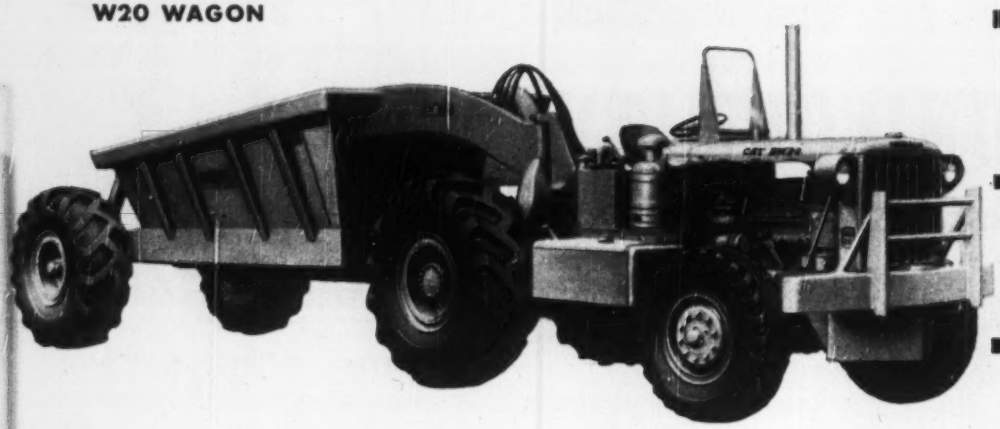
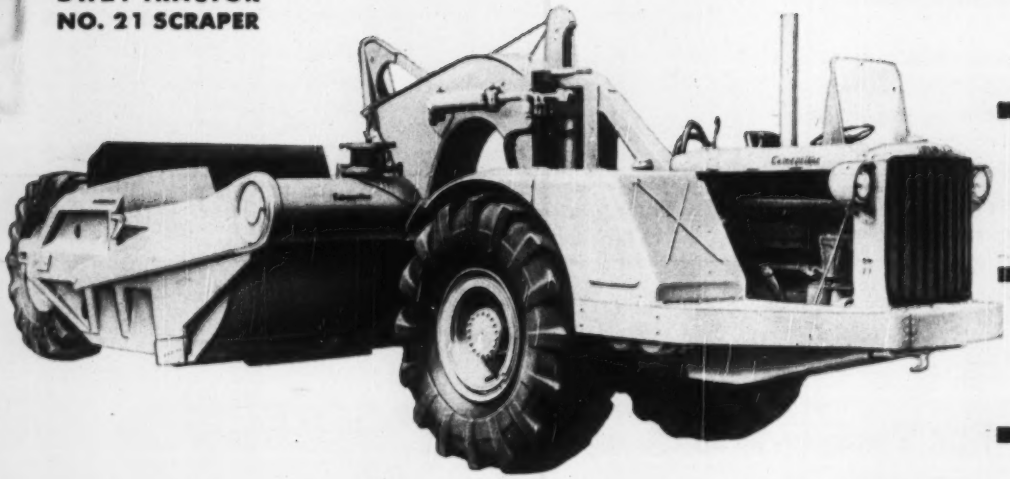
W20 WAGON



DW21 TRACTOR
NO. 21 SCRAPER



TO THE "CATERPILLAR" LINE

—TO BRING YOU STILL GREATER EARTHMOVING CAPACITY AND SPEED

Accompanying the Tractor features generalized (below, right) the Wagon member of this big-capacity unit offers:

17 cu. yds. capacity, struck; 25 cu. yds., heaped.

Travel speeds, through tractor's 5 gear ratios, ranging from 2.88 to 26.6 m.p.h.

Generous size hopper to provide good target for shovel or dragline loading.

Controlled dumping . . . openings can be varied without mechanical adjustment—permitting either dumping or windrowing.

Accurate hydraulically controlled dumping with positive mechanical lock on dump doors.

THE DW20 TRACTOR AND NO. 20 SCRAPER UNIT

The "Cat" No. 20 Scraper is available also for the DW20 Tractor. It has the same capacity and general specifications (except in type of gooseneck) as the No. 21 Scraper described below.

THE ENGINE: ***Both prime movers have the new 6-cylinder "Cat" Diesel Engine . . . 275 HP. peak capacity at 2,000 r.p.m. tested in accordance with A.S.M.E. Power Test Codes; 225 HP. at 1,900 r.p.m. available at the flywheel.***

Accompanying the Tractor features generalized (right), the 2-wheel DW21 offers:

Full 90° turn each way.

Travel speeds, through 5 gear ratios, ranging from 2.16 to 20 m.p.h.

Scraper capacity is 15 cu. yds., struck; 19½ cu. yds., heaped. (With available 12" extensions, 18 cu. yds., struck; 22½ cu. yds., heaped.)

Bowl and apron are designed to promote "boiling" action of earth through center of load—for full-measure yardage and minimum loading time.

Large low-pressure tires for easy load flotation.

'Dozer-type ejection for positive "kicking out" of sticky material; dependable spring-action ejector return.

Open bowl design to permit visible loading under shovel or dragline.

Adjustable rear axle to permit level cuts and desired settings.

Double bottom of special alloy steel. Self-sharpening reversible cutting edge.

High apron lift, low center of gravity.

FOR high-speed hauling . . . for high production . . . "Caterpillar" offers two new earthmoving units—the 4-wheel DW20 and the 2-wheel DW21.

With a completely new 6-cylinder Diesel Engine producing 225 HP. available at the flywheel, the newcomers give users their choice of high-speed wheel-type prime movers.

The DW20, with top speed of 26.6 m.p.h., has 2 design matched trailed units . . . the "Cat" W20 Wagon (25 cu. yds. heaped capacity) and the "Cat" No. 20 Scraper (19½ cu. yds. heaped capacity).

The DW21, with top speed of 20 m.p.h., trails the "Cat" No. 21 Scraper (19½ cu. yds. heaped capacity).

And, as always, "Caterpillar" quality, dependability, durability and work capacity are built in . . . backed by the unparalleled parts and service facilities of the world-wide "Caterpillar" dealer organization.

For further information on these two new units, contact your dealer or write the factory.

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TRANSMISSION

Constant-mesh transmission, and heavy-duty clutch. Special locking device that prevents gears from becoming disengaged.

BRAKES

Each large, heavy-duty brake is 22" in diameter, 7" wide. Compressed air energized brakes on both tractor and drawn member of unit. Handy control valves for applying both sets of brakes, and to right or left driving wheel.

STEERING

Hydraulic booster steering that follows the natural "feel of the road" hand guidance. Heavy steel stops for keeping gooseneck of drawn equipment from jackknifing.

OPERATOR COMFORT

Airfoam rubber cushion on bucket-type seat mounted on coil spring with hydraulic snubber. All controls within easy reach. Excellent visibility.

CATERPILLAR

DIESEL ENGINES • TRACTORS

MOTOR GRADERS • EARTHMOVING EQUIPMENT

For Service and Safety...

Re-Floor with Flintkote

Patching...Resurfacing...complete New Surfacing is quick and easy with cold-laid asphalt mastic mixtures.

You cut cost three ways when you repair or re-floor using Flintkote Flooring Emulsions.

Installation is fast. This means a minimum of preparation to apply and a saving in time loss through interruptions of operation. Mastic made with Flintkote Flooring Emulsions can be hand finished or power floated and opened to normal traffic in as little as 48 hours.

Maintenance is minimized. The resilient qualities of these floors make them truly heavy duty. They absorb shock from heavy loads. They do not require joints. And traffic irons out minor cuts or bumps. Patches may be featheredged.

Service life is long and pleasant. You'll get years of trouble-free service from Mastic made with Flintkote Flooring Emulsions. And a bonus of employee satisfaction goes with it, because these floors offer a comfortable surface on which to work. They're resilient and quiet . . . serve to insulate against cold floors.

So, don't fail to specify Flintkote Flooring Emulsions whether purchasing for your own use or letting a contract, and thereby obtain the floor that gives you top quality . . . while it saves you money. Comprehensive literature is yours for the asking.

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Whenever slippery floors create a hazard, cut the risk with Flintdek.* This popular oil and grease resistant, anti-slip floor coating is now available in Cement Gray, Slate Gray, Visibility Yellow, Tile Red and Green.

Properly applied by trowel to almost any clean, rigid surface . . . Flintdek will not chip or peel. And areas such as ramps, platforms, steps, around machinery and pools are far safer places to work when surfaced with this durable, anti-slip coating. Write for folder and free applied sample.

*TRADE MARK

FLINTKOTE *Products for Industry*

NEWS BRIEFS

Prequalification advantages—In New Jersey a movement toward bidder-prequalification at local levels is being sponsored by the State Highway Department. The department says that, because of prequalification of contractors bidding on road and bridge construction in New Jersey, only one case of default by a contractor has occurred in nearly 20 years.

"See how we build"—During the recent National Home Week, the people of Des Moines, Ia., had an opportunity not only to see hundreds of new homes just completed, but also watch carpenters, masons and other men work on homes in all stages of construction.

Coals to Newcastle—The lucky winner of a $25,000 house in a San Francisco "Saints and Sinners" milk fund drawing not only already had a home—he had nearly a thousand on his hands in the Bay Area alone. Winner Noel Cobb, vice-president and secretary of the National Engineering & Development Corp., who lives in Maplewood, N. J., is currently in northern California while his company is erecting 980 housing units at Fairfield-Suisun Air Force Base.

Safety first—Governor Sherman Adams of New Hampshire was informed recently that his state had the best traffic safety record in the country for the first five months of 1950. The National Safety Council at Chicago declared that the Granite State had a low mark of only 8.4 deaths per 100,000 population, or the equivalent of 3.6 deaths per 100,000,000 motor vehicle miles for the January-May period. This compared with a national average of 24.2 deaths per 100,000 population, and 7.1 deaths per 100,000,000 motor vehicle miles driven. North Dakota ranked second.

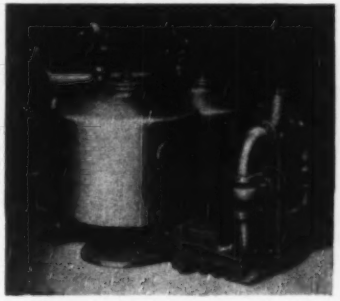
Big improvement program—The General State Authority of Pennsylvania has opened construction bids on nearly half of the $146,000,000 building and improvement program it has approved in the 15 months since its formation. Created by the 1949 General Assembly as a new commonwealth building agency and formally organized May 3, 1949, the authority has allocated slightly more than $146,000,000 of the $175,000,000 it was authorized by the legislature to borrow to finance its program.

(Continued on page 14)

Good reasons why they are your best buy
FOR EVERY MUNICIPAL INSTALLATION

SHONE PNEUMATIC EJECTORS

FOR HANDLING CRUDE SEWAGE AND SLUDGE • IN SEWAGE LIFT STATIONS
IN SUBWAYS • IN MUNICIPAL SEWAGE TREATMENT PLANTS



These far-sighted communities wanted the best, chose Shone Ejectors for recent installations:

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A few of hundreds of older Shones operating as efficiently and dependably as ever:

Long Beach, Calif.	Brighton, Mich.	Rochester, N. Y.
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Dublin, Ga.	Royal Oak, Mich.	Tulsa, Okla.
LaPorte, Ind.	Tawas City Mich.	Providence, R. I.
Warsaw, Ind.	Faribault, Minn.	Memphis, Tenn.
Cedar Rapids, Ia.	Winona, Minn.	Austin, Tex.
Davenport, Ia.	Brookhaven, Miss.	Dallas, Tex.
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- √ no wet well
- √ no noxious fumes or odors
- √ no danger of explosion
- √ no screens or shredders -- no repulsive cleaning job

For 75 years, in hundreds of municipal installations around the world, Shone Pneumatic Ejectors have been a symbol of utter dependability.

You may have heard the amazing story of the Shone Ejector sealed in its pit for more than 20 years—never inspected because it was not listed among mechanical equipment; rediscovered when alteration work opened the pit—operating as rhythmically and quietly as the day it was installed.

MINIMUM MAINTENANCE

Shone Ejectors require **no attention.** They can be operated from distant compressors — and several can be operated from a single compressor, plant.

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Write for Bulletin 4004—contains Air Volume and Pressure Table, sizes, dimensions, air piping layouts and other comprehensive specifications.

Use the coupon—for convenience.

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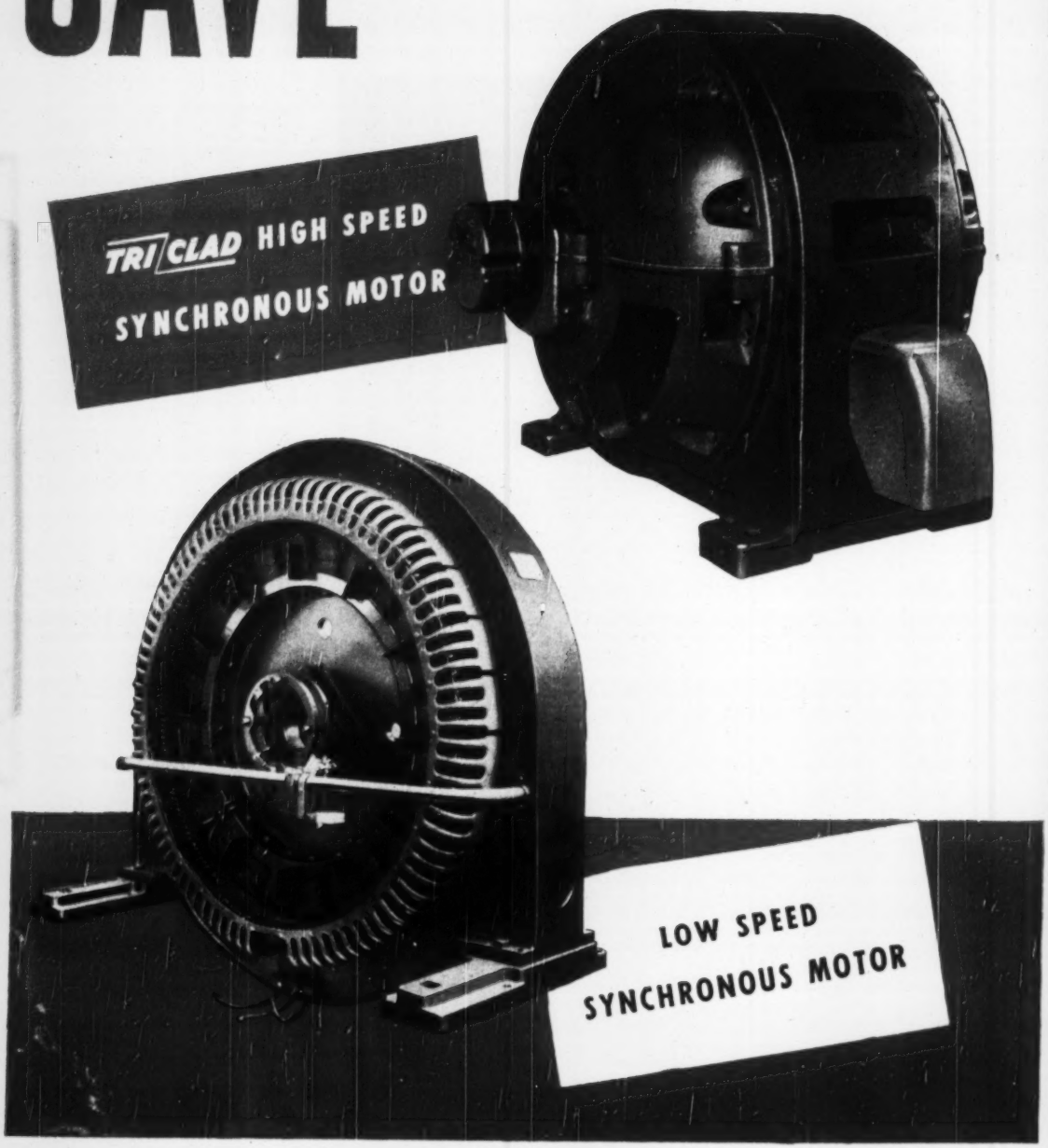


WITH GENERAL ELECTRIC SYNCHRONOUS MOTORS

SYNCHRONOUS MOTORS IMPROVE POWER FACTOR

1. Save you penalty charges for poor power factor

2. Save money by reducing demand and releasing needed generating capacity

Here's an example:

One company improved power factor from 72 to 84 per cent by installing a 300 hp .8 leading power factor G-E synchronous motor in place of another motor. This corrected power factor released 260 kva capacity in their generating equipment and allowed installation of additional motors.

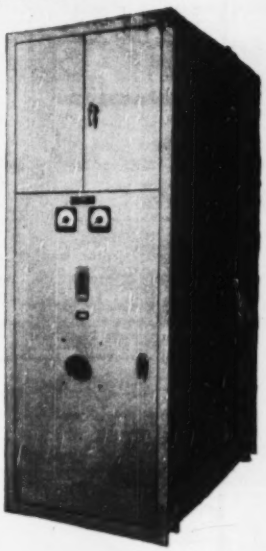
These savings in cost of operation are available to you.

Savings in the initial cost of equipment are also available—when synchronous motors are used in their natural fields of application. To find out about these natural fields of application, get in touch with our nearest office.

REMEMBER—General Electric Synchronous motors—whenever you need constant speed. They can give you lower initial cost, lower operating cost. For bulletin information, fill in the coupon:

G-E SYNCHRONOUS MOTOR CONTROL INCREASES YOUR SAVINGS

G-E synchronous control provides the accurate adjustments that enable you to improve power factor. Here's where details count—where the slightest variation of a pointer on a meter means money saved—or lost. And General Electric has not overlooked these elements. Consider the meters for a moment. Here, G-E has devised a long scale with the pointer in the same plane as the figures so there can be no possibility of misreading the instrument. Anti-glare glass is used so no distortion is possible.



The new smaller rheostat, too, has design features that not only result in longer life but in greater operating convenience and accuracy. The handle has been molded to fit the fingers of the operator—to prevent slippage and over correction. You can be sure, too, that the new field circuit will respond instantly to rheostat adjustment.

Protection is assured the operator through the attractive steel enclosure. The cabinet resists blows, keeps out dirt and other operating hazards. All live parts are strongly guarded. Plant appearance is improved with this control designed to line up with other G-E power units such as switchgear. Ask your nearest G-E office for more information about this equipment that safeguards your investment . . . helps save operating expenses.

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Apparatus Dept., Sec. R770-6
General Electric Co., Schenectady, N. Y.

Gentlemen:

Please send me: ☐ GEA-5332, Low-speed Synchronous Motors; ☐ GEA-5426, High-speed Synchronous Motors; ☐ GEC-505, Synchronous Motor Control.

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POWER LIFT DETACHABLE GOOSENECK TRAILER

PATENTS PENDING

1 Carries heavier loads on larger tires.
2 Detaches quickly for fast, easy front loading.
3 Stoops to clear low overhead obstructions.
4 Raises its deck to clear high banked crossings.
5 Is detached, loaded and re-attached in 5 minutes.

IT'S EASY AS

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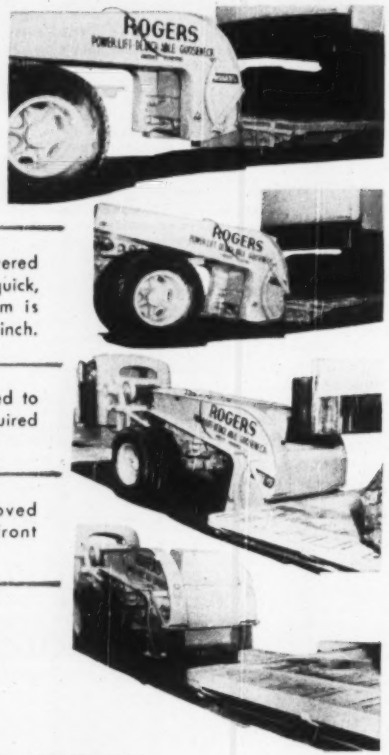

a Loaded trailer with deck in normal position for traveling.

b Front of trailer being lowered by cable operated ram for quick, easy front loading. Ram is powered by the customers winch.

c Front end of trailer lowered to ground. No blocking is required under frame.

d Tractor and gooseneck moved forward for quick, easy front loading.

DEVELOPED BY

The Trailer Pioneers

ROGERS BROS. CORP. ALBION PENNA.

135 Orchard Street

Export Office: 50 Church St., New York 7, N. Y. Cable Address: "Brocrites"

First come, first served—The New York State Thruway Authority has received a $5 check from a Northville, N. Y., woman who wanted the first special Thruway license plate. Mrs. M. D. Winne, a registered nurse, applied to Bertram D. Tallamy, Thruway Authority chairman, for a license to use the 535-mile superhighway now under construction at some places between New York City, Buffalo and the Pennsylvania border. She termed her check "an investment in my state," but the authority returned the check, advising Mrs. Winne that no fees for Thruway use will be charged until substantial portions are complete. She was invited to reapply when rates have been determined.

Help for cities—Alabama State Highway Department has taken over maintenance of those urban streets which serve as connecting links between state highways. There are 35 miles of such streets in Birmingham.

COVER PICTURE

When, next Jan. 1, Gail A. Hathaway, technical advisor to the Chief of Engineers, becomes president of the American Society of Civil Engineers, he will bring to the office as wide a knowledge of the physical makeup of the country and as large an acquaintanceship among ASCE members as reposes in any one man.

In his 22 years with the Corps of Engineers his hydraulic know-how has gone into such diverse structures as the Mississippi River locks, the Fort Peck hydraulic fill dam and such recent concrete dam giants as McNary and Chief Joseph.

Gail Hathaway's early days were spent in the Northwest where he graduated from Oregon State College in 1922, after several years' interruption caused by World War I service in Europe. As assistant to the state engineer of Oregon he learned about irrigation projects.

For 6 months during World War II he was special advisor to the Chief Engineer of the European Theater on Rhine River flood predictions in connection with the projected crossings of that river by the Allied Armies. It earned him a Presidential citation. Postwar, he has journeyed to Palestine and Venezuela on flood control missions. Since 1948 he has been chairman of the U. S. Committee of the International Commission on Large Dams, World Power Conference, and will leave in December for the 1951 meeting of this body in New Delhi, India. He and Mrs. Hathaway are going on around the world, returning in time for his first ASCE convention as president—in Houston in February.

WHEREVER TRACKS AND TIRES...

GRIP THE GOOD EARTH!

There you'll find Lamson & Sessions' line of high-quality, heavy-duty fasteners servicing all types of mechanized equipment.

Manufacturers, jobbers and repair shops alike simplify ordering and stocking—and are assured of the finest in fasteners—by standardizing on the complete Lamson line.

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BOLTS • NUTS • SCREWS • COTTERS • STUDS • RIVETS • SPECIALS • SCREW MACHINE PRODUCTS

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MONEY-SAVER FASTENERS

LAMSON LOCK NUTS: Economical, vibration-proof. Can be re-used repeatedly.

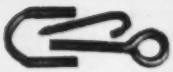
"1035" SET SCREWS: Cup point type, hardened, heat-treated.

COTTER PINS: Steel, Brass, Aluminum and Stainless Steel.

"1035" CAP SCREWS: Hi-Tensile heat-treated steel.

TRACTOR BOLTS: Made to manufacturers' standards.

MILLED STUDS: Concentric, accurate, in a full range of sizes.



"BENT" BOLTS: Including U Bolts, Eye Bolts, Hook Bolts, etc.

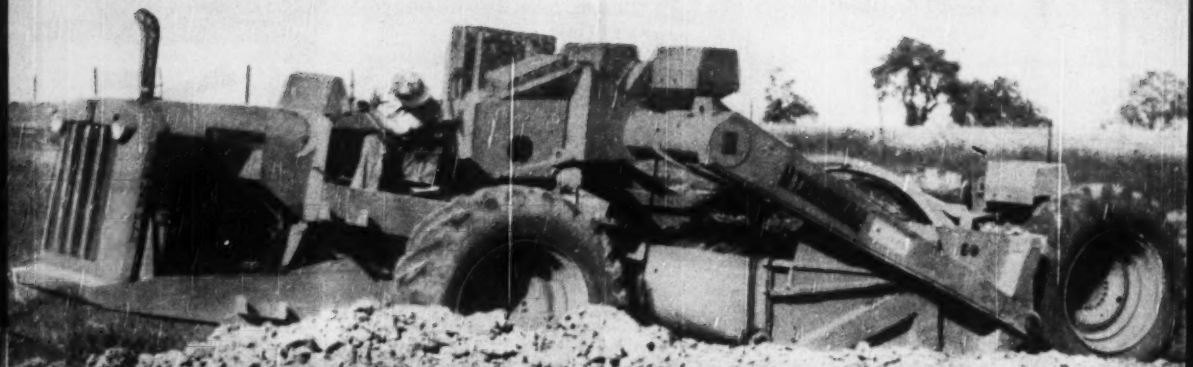
Wire Rope Clips: Hi-Center saddles, extra-strength U Bolts.

PIPE PLUGS: Forged Steel, heat-treated.

FOR MORE INFORMATION ON LAMSON *Money-Saver* FASTENERS . . . . . CHECK COUPON and CLIP THIS STRIP

The Lamson & Sessions Company
1971 W. 85th St., Cleveland 2, Ohio

66 pay yards hourly on 1000′ haul



with self-loading D TOURNAPULL

DOUBLES RETURN on INVESTMENT DOLLAR

Shely Construction Company, at Lexington, Kentucky, had to build roads and level walk-ways for the new Ashland Park sub-division. Job called for moving 20,000 yards of red clay. Material was handled by a high-speed, rubber-tired D Tournapull together with a crawler-scraper combination. Despite the "D's" smaller capacity, job production records show the 122 h.p., 7-yard LeTourneau rig moved a total of 12,000 yards . . . while the 93 h.p. crawler with 11-yard scraper (costing approximately 30% more than the Tournapull) hauled only 8,000 yards. The equivalent dollar investment in D Tournapull provides DOUBLE the production . . . makes your equipment dollar pay double returns.

Makes 12 trips an hour

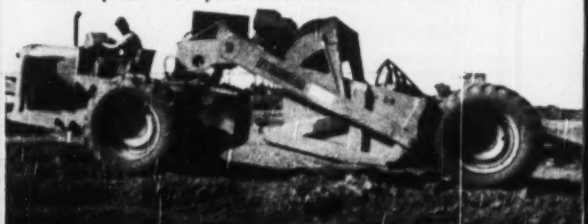
The D Roadster regularly self-loaded 5½ pay yards of clay in an average of 1 minute . . . completed a typical 2000′ round trip up 0 to 4% grades every 5 minutes. Actual load count showed the hustling Tournapull delivered 12 loads an hour under these conditions . . . averaged 66 pay yards hourly.

Prior to this Ashland Park contract, Shely Construction Co. used their electric-control "D" on construction of a 40,000-yard temporary landing field for the CAA at Georgetown, Kentucky. After this assignment was completed, the machine was roaded 14 miles through highway and city traffic in one hour, and was ready to start moving dirt on the housing project near Lexington.

Wants to add 2nd Tournapull to fleet

"Our D Tournapull has done better than we ever expected," says Owner R. S. Shely. "Its electrical system is dependable and excels in workability. We like the instant response to load demands. *We're proud to own one "D" . . . and want another.*"

Better find out what Tournapull's faster cycles can mean to *your* profits . . . both on small-lot dirtmoving like this . . . and in fleet operation with a pusher on bigger production jobs! See your LeTourneau Distributor *TODAY.*

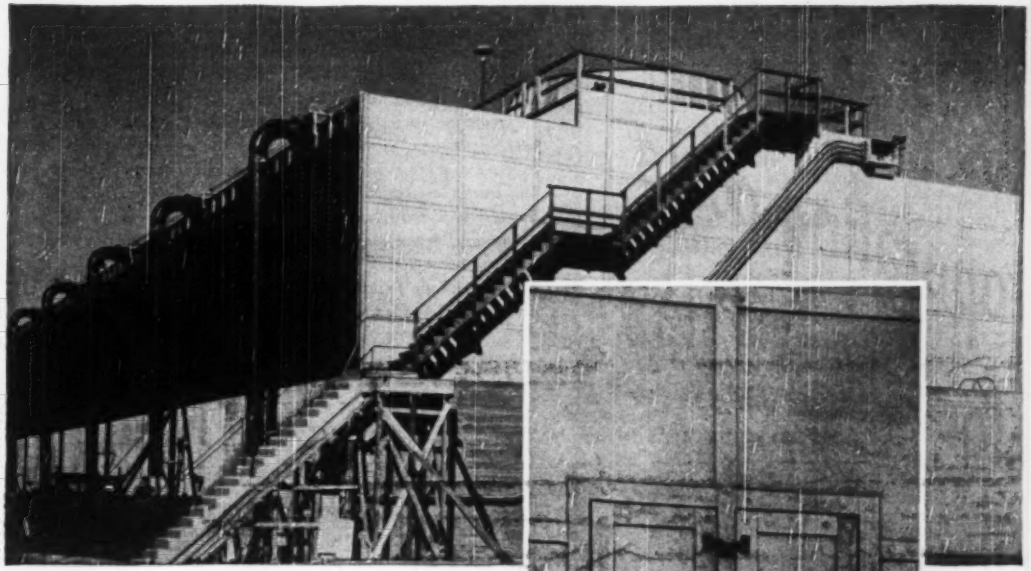


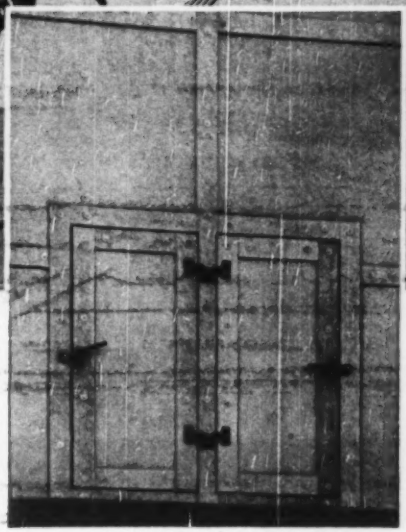
On airfield job near Georgetown, this self-loading Roadster averaged 17 trips hourly on 1400′ cycles.

Tournapull—Trademark Reg. U.S. Pat. Off.

LETOURNEAU PEORIA, ILLINOIS — JOB-PROVED — **TOURNAPULLS**

MORE YARDS PER HOUR WITH RUBBER-TIRED POWER





TWO-FISTED K&M "Century." APAC LICKS DOUBLE THREAT

"Century" ¼" thick APAC ASBESTOS-CEMENT SHEETS were used on this cooling tower at the Mustang Plant of the Oklahoma Gas and Electric Co. Constructed by Marley Co., Inc., Kansas City, Kansas.

Cooling tower temperatures on one side, plus Oklahoma weather on the other, don't bother the K&M APAC Asbestos-Cement Sheets on this job. Always, on any flat surfaces—large or small—outside or inside—K&M APAC is good for years of strictest economy.

APAC sections are large and strong, so that application is simple and quick. Thus erection time and labor costs are sharply reduced. Then comes lasting resistance to every changing season; to fire, rust, rot, rodents and termites. You couldn't have stronger assurance of minimum maintenance. You won't even need painting to preserve the neat, tough APAC surfaces.

For name of your nearest distributor, and all particulars, write to us.

K&M APAC suits your needs...

Use it for any flat panels, partitions, sheathing, shaft casings, bins.

Cut it easily to any needed sizes, right on the job.

Apply it over steel or wood girts, wood studs, solid wood sheathing, insulation board.

APAC Standard Sheet Size: 4' x 8'. *Standard Thicknesses:* 5/16", ¼", 3/8".

Nature made Asbestos...

Keasbey & Mattison has made it serve mankind since 1873.

K&M Best in asbestos

KEASBEY & MATTISON

COMPANY • AMBLER • PENNSYLVANIA

Reduce operating costs for lower bids...

Low bids are mighty important as long as you retain enough profit. Many experienced contractors have found they can accomplish both by taking advantage of the savings made possible with Armco Corrugated Metal Structures.

Figured on an *installed* basis, Armco Structures save time, labor and money in many ways. They often weigh only one-tenth as much as more massive types, yet are amply strong for the purpose. This means low handling and hauling costs. Job costs go down because unskilled labor quickly makes the installation.

Standard Armco Pipe and PIPE-ARCH are supplied in any length that can be hauled or handled, while larger MULTI-PLATE Pipe, Arches or PIPE-ARCH are shipped knocked-down. No large and expensive equipment is needed for installation. A few men with a rope sling or an A-frame can handle the largest structure.

Assembly is made with simple band couplers, or by bolting prefabricated sections together. No hand excavation is required—no delay for formwork or curing and no backtracking to finish the job. Backfilling is done directly against the metal and traffic rolls immediately.

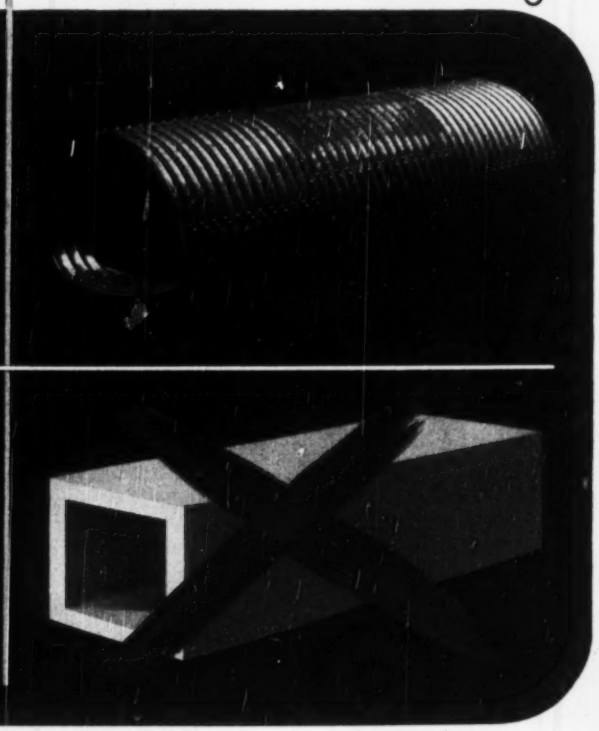
Bid low with good profit by figuring that next job with an Armco Corrugated Metal Structure. All are ideal for highway, railway, airport and municipal installations. Write for complete data. Armco Drainage & Metal Products, Inc., 3330 Curtis Street, Middletown, Ohio. Subsidiary of Armco Steel Corporation.

Export: The Armco International Corporation

ARMCO DRAINAGE STRUCTURES

Bids 26% lower

Experienced contractors figure the time, labor, and money-saving advantages of Armco Corrugated Metal Structures into their bids. On drainage work for a southern highway the winning contractor was able to bid 26% lower for Armco MULTI-PLATE PIPE-ARCH than competing bids for a monolithic box structure.



THE CONSTRUCTION WEEK

PRICE CONTROLS—COMING UP?—Washington thinks Mr. Truman is having a hard time putting off price controls (as he's been planning) until next spring. The armed services are already complaining that price increases are shrinking the defense dollar; economics advisers think it's time to stop wages from chasing after prices—upward. But the President is still intent on holding off—he knows price ceilings are hard to set up, harder to administer. Anyway, he's going to give credit curbs (like that on housing last week) and higher taxes a full try at breaking inflation.

NEW RENT CURB DUE—Along this line, a new rent control bill—with plenty of teeth—is in the works. Insiders say the new bill will gear rents with price controls to keep rising costs from squeezing landlords. The bill, it's said will: Restore mandatory rent ceilings, eliminate local option; abolish the guarantee of a "fair net" operating profit; place new rental housing under the same formula as old housing.

SUPERFICIAL—That aluminum coating for steel to be used in the new Aluminum Company skyscraper in Pittsburgh (ENR Sept. 7, page 17) will be as superficial as our own reporting job on it. Fact is that the steel will be coated as usual with red lead in the shops, then field-coated with aluminum.

ROADS NOT CRIMINALS—The Highway committee of the Ohio State Legislature made a novel choice of words to describe its reasons for changing the state's tax structure to aid highway work. "The highways are no longer analagous to jails," commented the committee, "whose inmates must be supported by the general taxpayer. They are now analagous to other fields of productive enterprise which should be economically self-supporting." With that as a guide, the legislators settled down to framing new laws to put the state's 103,000-mile road network on a paying basis through changes that would put heaviest taxes on heaviest users.

DON'T GIVE UP THE STEEL—New England's determination to get itself into the steel business is getting a big assist from the Korean campaign and the defense drive, say Boston business leaders. The New England Council, meeting recently, put a $240 million steel mill at the top of its list of objectives. Significantly, every state in the area has said it will be willing to have the mill within its borders, although New Englanders generally concede that Connecticut would be the site.

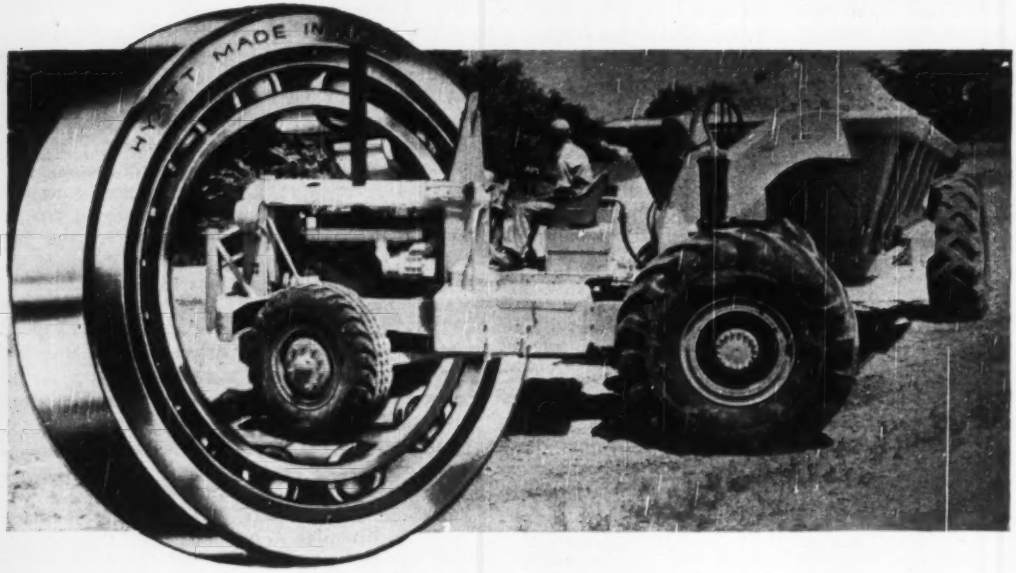
LABORATORY OUT—The U. S. Department of Agriculture has given up its plans for a $25,000,000 hoof and mouth disease laboratory on Prudence Island in Rhode Island's Narragansett Bay (ENR July 20, p.34). Reason: Congress has approved the project, but refused to put up the money. Probable background: No state was very eager to have the lab built in its territory. In any case, said USDA, land options will not be renewed.

STILL TRYING—Prefab housing isn't out of the picture yet. Raymond A. Foley, Housing and Home Finance Agency head, said last week his agency would set up a division of Loans for Prefabricated Housing, to aid the production of prefabricated houses or prefabricated components, or for large-scale modernized site construction.

TEST—in order to settle the constitutionality of the Ohio Turnpike Act (challenged on the ground that issuance of bonds by the commission for funds to pay engineering firms was unconstitutional) a friendly mandamus action will be filed this month in state supreme court. Nominally, the suit will be brought to compel State Auditor Joe T. Ferguson to pay fees of $27,500 to two consultants for services rendered the turnpike commission.

INTERNATIONAL NOTE—A few of the facts slipping under the vaunted "Iron Curtain" include these: The Communist insistence of meeting astronomical production goals puts a terrifying responsibility on Soviet plant managers, foremen, engineers and supervisors. One result, according to a speech by a minor Kremlin official, is that more than half the graduates of Moscow's advanced engineering schools are ending up in bureaucratic middleman's jobs—posts where the main job was to pass on orders from above to men below. Less than half are ending up as engineers—where necks are fully exposed. Another point was the announcement in August of some grandiose plans for irrigation and power in the Volga basin. Back in 1930, a similar set of plans were heralded—for the same area.

ADVICE ON POWER—An electric power advisory committee that will make the first formal appraisal of power needs and means of mobilizing power facilities is now scheduled to hold its first meeting in Washington Oct. 19. Made up of representatives of private utilities and associations, as well as of the government's own power agencies (Bonneville, Southwest, etc.) the group will serve as advisor to the Department of Interior's new Minerals and Energy Administration.



HYATT and CATERPILLAR
Partners in Performance

THE new "CAT" DW20, latest of Caterpillar Tractor Co.'s wheel tractors, is the result of five years of intensive research, design engineering and job-proved application.

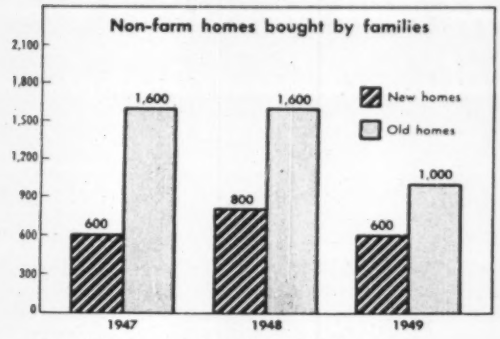
One of the outstanding features that provides dependability and easier operation of this new tractor is the application of Hyatt Roller Bearings. Proved through the years on all types of "Caterpillar" products, Hyatts make the turning of wheels, gears and shafts easier—reduce wear and care—perform smoothly under the toughest conditions and come back the next day ready for more.

• • •

With Hyatts in the vital positions, Caterpillar, like so many equipment builders, helps build performance into the equipment they make. Hyatt Bearings Division, General Motors Corporation, Harrison, New Jersey.

HYATT ROLLER BEARINGS

The Housing Market



Source: Federal Reserve Board Survey of Consumer Finances

HOW MANY NEW HOUSES IN '51?

How many homes will the industry start next year?

This is the multi-billion dollar question being argued throughout the building industry—and throughout the Washington agencies.

There's little doubt yet that public demand will stay high. Builders are reported to be selling houses as fast as they are being completed—in spite of rising prices. Some of this demand was inspired by Korea. And it will continue, in part. As long as there's a threat of war, there'll be urgency in demand.

In this sense, prospects for next year add up to a continuing high level of production—with the ceiling probably the availability of materials. Adding up prospects this way—and considering military needs for critical copper, steel and other materials—1951 might well see 850,000 to 900,000 homes started.

But the real question is what will credit controls do? What will be the government's part in the picture?

Credit works on both sides: It can make the market. The chart above, based on the Federal Reserve Board's surveys of consumer markets, indicates that the demand for houses dropped sharply last year. The board's figure of 600,000 new homes bought checks roughly with figures on the number of houses started, after allowing for the number carried over for sale this year and the number built for rental.

The chart shows consumers bought 800,000 fewer homes—new and old—in 1949 than in 1948. Obviously that trend has been reversed this year. But the new strength in the 1950 market was based largely on the government-backed easy credit.

In fact, mortgage business has leaped ahead at a record rate this year. New loans made on small residential properties in the first half of 1950 are estimated at $6.6 billion dollars—a third more than were made during the first half of 1949. And almost two-thirds of the credit extended buyers of new homes was insured or guaranteed by federal agencies.

The chart makes a second point important here: Sales of existing houses are larger than sales of new houses, by a considerable margin. This was true in a period when credit terms generally favored new houses. They could be bought with a smaller down payment and longer term mortgages than could the old houses.

But next year that balance will change. The new credit restrictions don't affect old houses. They will make it harder to buy new.

So credit restrictions may have a double-barrelled effect. They are aimed at new houses and they come down hardest on the so-called luxury houses, those selling for more than $15,000. But they may force down new construction far more than planned by causing more and more prospective buyers to take existing homes rather than new ones.

The best information we have as to the terms on which houses have been sold also comes from the Federal Reserve surveys. In 1949, four out of every five home buyers used credit.

The buyers made substantial down payments. Although roughly five out of every twenty buyers bought a home costing $10,000 or more, only about one in twenty had a mortgage of $10,000 or more. About eight in twenty borrowers had built up an equity of $2,500 or more by the end of the year. And one in twenty of those who borrowed to buy paid off the debt by the end of the year.

But this isn't anything like precise enough information to allow forecasting the effects of tighter credit terms on the industry.

Aside from everything else, the credit information we have throws little light on financing of mass-housing—the large-scale rental apartments and developments which are a major part of this year's housing. It is already clear that uncertainty about financing has led many builders to suspend their plans for next year.

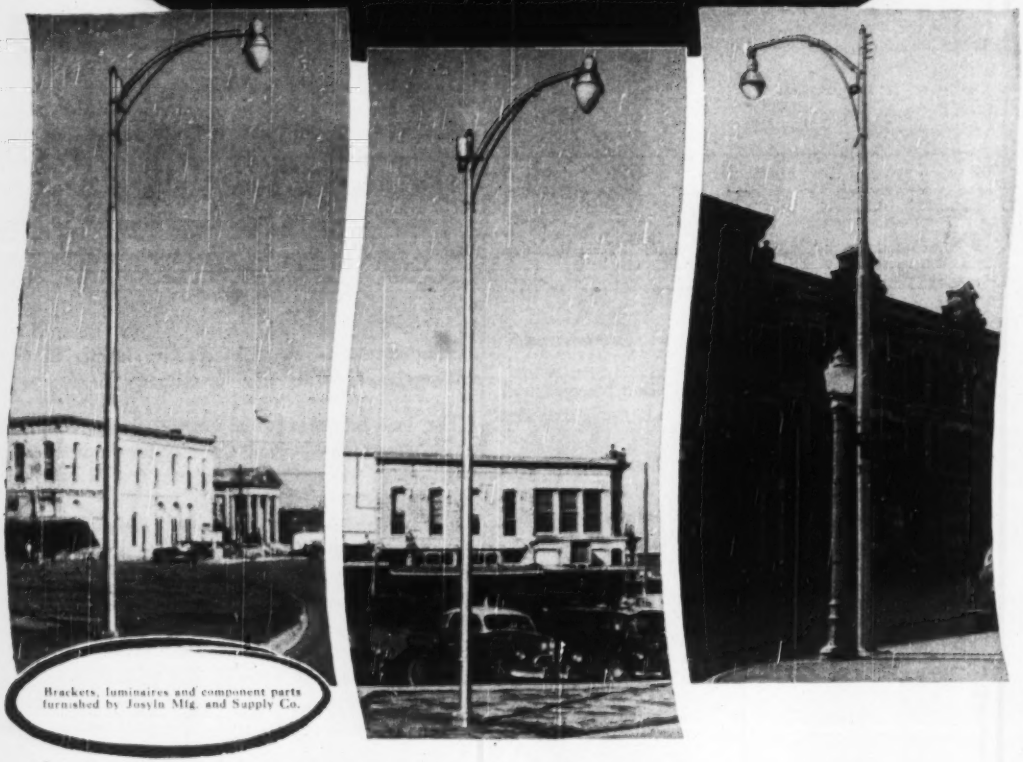
This shortage of information handicaps those in the industry who are trying to estimate next year's prospects. And it also gives headaches to the government people trying to apply the controls.

What does all this add up to?

First—it is fairly clear that Washington would like to hold new housing starts next year down to 800,000 as compared to perhaps 1.3 million this year.

Second—there's no doubt that credit controls can cut back housing. The danger is that they may work better than expected.

Spruce Up your streets with these smooth steel poles



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Housing Controls Need Close Watching

THE DESIRE of the Federal Reserve Board to curb inflation is commendatory. And the method it is using—credit control—is probably less objectionable to most people than price and wage controls. But certainly, indiscriminate application of credit controls to all phases of our economy—and particularly to housing—is questionable.

Following the war, federal policy toward credit for house construction was made extremely liberal to stimulate homebuilding. It was definitely inflationary. Therefore, a restoration of more normal credit requirements would have checked the inflationary trend in that field of activity. But "Regulation X", issued last week by the FRB and the Housing and Home Finance Agency (ENR Oct. 12, p. 26) goes beyond normal requirements. It calls for down payments varying from about 20 to 30% for non-veterans, and 10 to 25% for veterans, for houses selling between $9,000 and $14,000. A 50% down payment is required for houses selling for more than $25,000. The result, homebuilders say, will be too great a curtailment of house construction.

A considerable homebuilding decrease is certain to result from the current scarcity of materials going into house construction. A further deep cut resulting from too drastic credit restrictions could increase the demand for existing houses, sending prices into an upward spiral like that of the war years. Also, it would throw out of work more men who for one reason or another are unsuited for work in defense industries.

For these reasons, the Federal Reserve Board and the Housing and Home Finance Agency should watch the homebuilding field closely to observe the effect of Regulation X, bearing in mind that it takes homebuilders about six months to get projects started.

Pollution from Coal Mining

ACID DRAINAGE from coal mines has been polluting our rivers and streams as well as causing corrosion damage to waterfront structures and vessels for years. Yet this injury to one great natural resource—water—by another has continued at an increasing pace with no feasible means of alleviation in sight.

The existing problem is critical, as was pointed out in our issue of Sept. 21, p 41, but the potential pollution load that may be expected from this source is perhaps of even greater importance. Deposits of coal in the United States represent reserves that reach hundreds of years into the future. If acid-control measures are not devised, active and abandoned coal mines will discharge more and more acid into waters already gravely polluted. And many hundreds of miles of streams not yet affected will be contaminated.

The mine-acid pollution problem would not be cancerous—nor tolerated by industry or the users of the natural water courses—if practical means for curbing it were available. The fact that the means are not available is all the more reason for surprise at the pittance the coal industry has spent on research—either cooperatively or as individual companies.

The paper, chemical and canning industries—that have spent substantial sums on waste-treatment investigations—have recognized their responsibilities for waste disposal. The coal industry should follow suit.

The High Cost of Congestion

TRAFFIC CONGESTION in midtown Manhattan costs seven cents per minute per truck, according to Frank B. Kurtz, president of the New York State Truck Association. Since each of the 30,000 trucks that serves the area loses about four hours each day in earning time, according to Mr. Kurtz, the daily loss per truck is $16.80 and the annual cost of congestion to truck operators alone mounts to around $150 million.

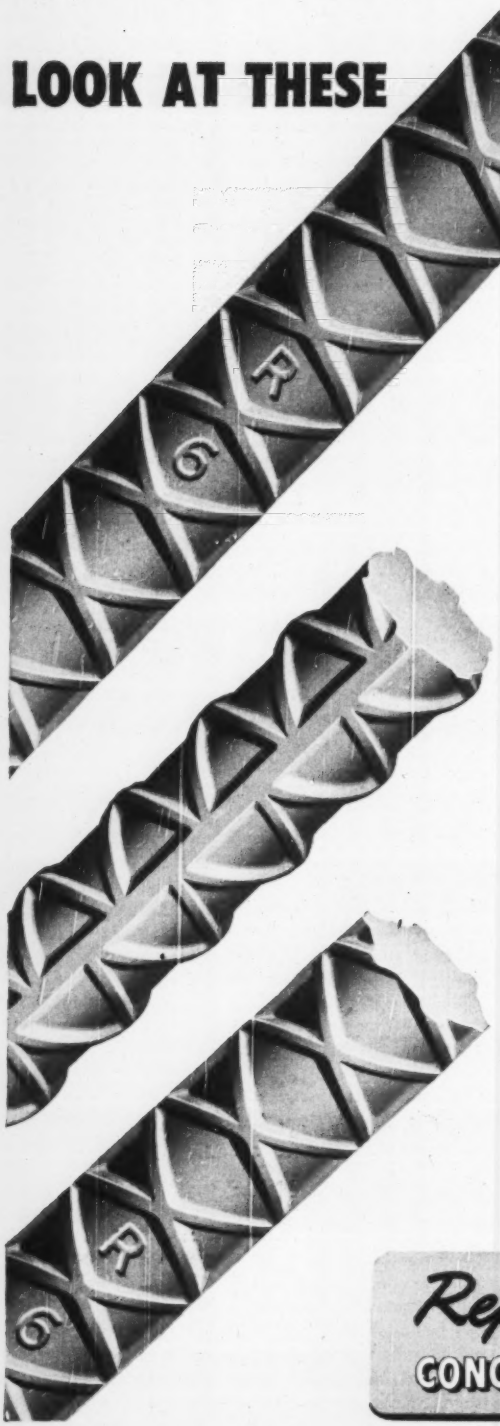
Mr. Kurtz cites sidewalk unloading as the chief cause of this congestion and declares that off-street parking and delivery space in each commercial building is the solution. He would add a requirement for such facilities to the city's building code. Stringent enforcement of the code, Mr. Kurtz told the annual meeting of the American Trucking Associations, would end this cause of congestion.

Unfortunately, a solution cannot be reached by so simple a route because building code provisions generally cannot be made retroactive. Also, any legislation requiring modification of existing buildings to provide off-street loading and delivery platforms can be expected to meet strong opposition from politically powerful real-estate organizations because of the cost.

Some reduction in traffic congestion could be obtained through wider use of trucks designed for quick and easy loading and unloading in city streets, as was proposed at the truck-operators meeting by Robert F. Black, president of the White Motor Co. Further relief is possible through consolidation of shipments for certain zones or even large buildings in transhipping terminals such as the new truck terminal of the Port of New York Authority. Better enforcement of parking restrictions also will help, especially if the restrictions can be extended to limit the time that trucks can occupy street frontage for delivery or loading purposes.

But these are only palliatives. No real solution will be attained until some way is found for making the solution a matter of deeper concern than it is today for the property owners in congested areas and their tenants.

LOOK AT THESE DEFORMATIONS



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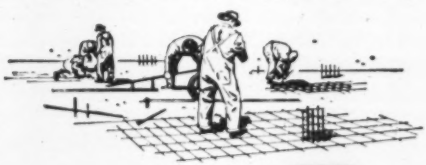
7	0.60	0.875	2.044
8	0.79	1.000	2.670
9	1.00	1.128	3.400
10	1.27	1.270	4.303
11	1.56	1.410	5.313



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ENGINEERING NEWS-RECORD

October 19, 1950 VOL. 145 NO. 16

Budget bureau money cuts hit heaviest at construction

Total reduction ordered reach $183-million—Army Engineer work, hospital program and Department of Interior construction taking greatest trimming

More than half of the $580 million "savings" under federal appropriations of some months ago will come out of construction funds, it became apparent last week, as the U. S. Bureau of the Budget completed a Congress-directed pruning of the $36 billion omnibus appropriations bill.

The Budget bureau cuts were in line with Congressional instructions to pare down non-defense items in the huge appropriations bill, rather than argue out the cuts item by item.

• **Army, hospitals get less**—Biggest cash cut was taken by the Corps of Engineers civil works program, which was down by $50,000,000. Biggest general cutback was sustained by the U. S. Public Health Service, whose federal aid hospital program was pared by $75,000,000 in contract authorization.

• **Interior Loses Most**—Second largest cutback was sustained by the Department of the Interior, which dropped a total of $79,890,000 (including a $6,878,000 sum withheld by the department itself, above the Budget-dictated cuts.)

The lion's share of this reduction fell to the Bureau of Reclamation, which alone will lose $56,950,000.

Twenty projects, including a number of units of the Missouri River Basin program, are affected.

• **Planning to continue**—Among the interesting sidelights on the general cutback was allowance of a $15,000,000 fund for the Community Facilities Service, to allow continuation of the loan program for advance planning of state and local (non-federal) public works.

A month ago (ENR, Sept. 21, p. 23) the Budget issued an order freezing the advance planning program, which Congress had originally allowed a $47,000,000 appropriation.

Restoration of some funds will keep the program in operating condition, at least.

Other major slashes included: General Services Administration, Public Buildings service (outside District of Columbia), $19,000,000; Department of Agriculture Farm Housing and Tenancy Loans, $24,500,000; Department of Commerce, Civil Aeronautics Authority, for federal aid airport program, $15,000,000; Housing and Home Finance Agency, community facilities services, $15,000,000.

• **Plenty left**—Although the cut in Corps of Engineer funds seemed sharp, there was plenty left—$618,564,650, to be exact.

Commenting on it, Maj. Gen. Lewis A. Pick, Chief of Engineers, said that expenditures now authorized will be sufficient to insure that work goes forward on projects already started, with emphasis on dams projects that are designed to produce electric power.

Overall, the Army appropriations now include these major items: $335 million for general flood control; $182 million for rivers and harbors; $61,000,000 for the Lower Mississippi Basin; $95,000,000 for Missouri River Basin; $93,000,000 for Columbia River Basin; $58,000,000 for Ohio River Basin and $28,000,000 for Arkansas-White River Basin.

• **Other cuts**—Among other cuts dictated by the Budget bureau was a $66,427,000 one to the Department of Agriculture's Rural Electrification program—part of which would include construction money.

In addition, $100 million was chopped from foreign air programs; $50,000,000 from both the European Rehabilitation Program and funds for government and relief in occupied areas of the world; and more than $40,000,000 from funds provided for independent offices and the executive office.

No cuts were made, however, in funds to complete repairs of the White House.

HOLING-THROUGH IN RHODE ISLAND—A major section of the $900,000 Broadway sewer tunnel in Pawtucket, R. I. is holed through, and men concerned exchange traditional greetings. The men are (left to right) Michael J. Verrochi, president of Marinucci Bros., Boston contractors; and Blackstone Valley Sewer District representatives Charles Hammann (barely visible), engineer; Luigi Scala, first vice-chairman; and William J. Halloran, chairman.

Calif. const. peace hinges on wage pact

A.G.C.-indepdent contractor damage suit may be dropped if carpenters, other unions approve new pay rates

A new basic wage agreement has been reached between negotiators for the striking AFL carpenters, the five basic AFL building unions and the Southern California Associated General Contractors. There are also indications that if both parties ratify the pact by Oct. 30, the AGC may call off its $15,000,000 damage suit against the carpenters and certain non-AGC contractors. (ENR Oct. 5, p. 23)

The new pact would hike carpenters' hourly wages by 8 cents, effective Oct. 30, with an automatic 5-cent additional raise on May 1, 1951. Also, it would grant a 5-cent boost to members of the other five basic building trades unions, effective Oct. 30, with an additional automatic 5-cent raise on May 1. The contract would run until May 1, 1952.

The carpenters will hold a referendum ratification vote, with results due by Oct. 30. A spokesman for the union said the pact "has a 50-50 chance of acceptance." AGC contractors will vote on the pact Oct. 24.

A poll of a representative group of AGC members seemed to indicate that with ratification of the wage pact, the purpose of the $15,000,000 suit would have been accomplished.

The new rates effective Oct. 30 would give the carpenters a $2.28 base hourly rate, compared to $2.20 in effect at the time of the strike, July 10. On May 1, they will receive $2.33.

In the deal last May, the carpenters refused to accept the 8-cent-an-hour pay boost accepted by the other five basic trades. Carpenters struck for a 20½ cents hourly increase.

The settlement of the strike would give the carpenters 21 cents more, including the 8 cents increase granted the other unions last May. The other five basic unions, which did not strike, will get a total of 18-cents more.

Although ratification of the new wage pact by AGC members and the unions would mean a back-to-work movement on the part of the carpenters, no provision is made for its acceptance by many non-AGC contractors against whom the AGC filed suit. In the case of these unions—whose members now get $2.32½ hourly rates it would mean a wage decrease for carpenters—at least until next May 1.

But an AGC spokesman termed continuance of the $2.32½ scale by non-member contractors "unlikely, especially since we now have the wage scale stabilized."

Unions protest open-shop camp work

AFL building trades unions are beginning to stir up a fuss over Defense Department policies on construction work. The fuss is stimulated by increasing construction connected with expansion and rehabilitation of military camps.

At issue: Awarding contracts to non-union contractors and using G.I.'s or civil service employees.

At Fort Belvoir, Va., rehabilitation of 202 barracks, abandoned since the war, was slowed for 10 days when 150 AFL carpenters, employed by three contractors, walked off the job in protest against the presence on the project of non-union men employed by a fourth contractor.

Before the carpenters returned "under protest," G.I. mechanics performed such repair work as was necessary to protect incoming troops.

The AFL carpenters resumed work under a promise from the Washington (D.C.) Building Trades Council that it would undertake a drive to keep non-union craftsmen from construction projects on military reservations around the nation's capital.

Union officials indicated that this would be expanded into a national issue.

• **Non-union not "responsible"**—Pentagon officials say they award construction contracts to the lowest "responsible" bidder, irrespective of whether he employs union labor. Labor officials contend that a non-union contractor is not "responsible," and for years have tried to get a government ruling to that effect.

During the war, practically all government construction was under union conditions under an agreement obtained by the Office of Production Management. The agreement included a no-strike pledge by the AFL building trades of double time for overtime. There was language in the agreement, too, that was construed to give union contractors an edge on government work.

On many jobs, it will be recalled, men had to get work permits from unions in order to work.

The Taft-Hartley Labor Law will stand in the way of similar practices in the present emergency. This will increase AFL pressure for amendment of the labor law if it can't be repealed.

Building trades President Richard J. Gray has complained to top Defense Department officials over the use of temporary civil service employees and G.I.'s in construction work below prevailing rates.

On Aug. 11, the then Secretary of Defense Louis Johnson issued a policy statement which defined the various types of construction—maintenance, repair, alteration and new construction—and detailed for the procurement agencies the limited use that should be made of civilian and military personnel on these projects.

Gray contends that this statement and regulations issued by the Defense Department are a "moral if not an actual legal violation" of the Davis-Bacon act governing wages and hours on Government Construction.

ENGINEER WORK IN KOREA—George Sawyer (right) of Oswego, N. Y., an Army Engineer with the U. S. Second Division, is waist deep in water as he is aided by three South Korean soldiers in erecting a prefabricated adjustable bent for a new bridge across the Naktong River. (Wide World Photo)

Md. judge kills demurrer on new labor-board law

Baltimore Circuit Court Judge Niles recently threw out a demurrer challenging the legality of a proposed law creating a State Commission on prevailing wages. The complaint was filed by Associated Builders and Contractor of Marvland, and other construction firms that employ non-union labor. (ENR Aug. 31, 1950, p 26.)

Complaints alleged (a) that the bill was sponsored by organized labor to strangle open-shop firms, and (b) that the nature of the bill prevents it from being considered during the legislature's short session, which is constitutionally limited to bills dealing with the budget, general welfare, or acute emergency.

Civil engineers urged to give aid to growing military defense program

ASCE convention in Chicago also hears about structural design in the atomic age, construction achievements and Chicago public works

Greater demands for top-bracket, technological assistance are going to be made on the civil engineering profession to strengthen the fast-rolling national defense program. Farsighted protective measures are required to meet the threat of damage from atomic warfare. Design and construction know-how in the vraious civil engineering fields continues to chalk up notable achievements. And Chicago public works demands are reaching new degrees of magnitude. These were the significant revelations at the 98th annual business meeting of the American Society of Civil Engineers last week in Chicago.

Sounding a warning that national security can't be bought by dollars alone, Rear Admiral Joseph F. Jelley, Chief of the Navy's Bureau of Yards and Docks, urged more thought be given to the military aspect of civil engineering construction. "And this should be implemented at a high level" he said, "by quickly setting up an efficient liaison group comprising civil engineering leaders and representatives of the military services."

One of the first steps of this liaison group should be to mobilize the wealth of talent available in the technical committees of ASCE. It should evaluate the work now being done and initiate new programs to aid national defense. The armed services would more than welcome an opportunity to work with such a group. Speaking as a member of ASCE Admiral Jelley declared "Individual contributions of civil engineers have been outstanding but our Society and the profession as a whole have been much too passive in aiding the preparations for an adequate national defense."

Before the Convention adjourned the executive committee of the ASCE Board of direction appointed the liason group that Admiral Jelley had asked for.

• **Engineer-government cooperation**—This time with the criticism leveled against government—was also touched upon in an address by Gail A. Hathaway, technical advisor to the Chief of Engineers. Mr. Hathaway will be the next president of the ASCE, to take office next January. Since under the new constitution there will be no January meeting, President Ernest E. Howard made a place on the October meeting program for the usual address of the president-elect. Mr. Hathaway pointed out that too many federal commissions, set up to deal with engineering matters, lack sufficient engineering representation in proportion to the economists, lawyers and sociologists that receive appointments. A lack of appreciation in high places that engineers are not mere technical experts, but able administrators, planners and economists as well, was blamed.

• **Bomb protection**—How much protection can be designed into a building against damage from bombs, either atomic or conventional? The seriousness of this nebulous question—discussed in considerable detail by A. Amirikian, head designing engineer, Bureau of Yards & Docks—seemed to be accentuated by the vulnerability to a bombing raid of Chicago's great industrial concentrations.

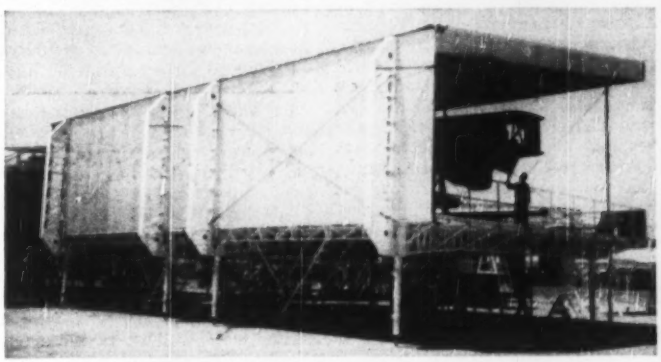
Limiting his discussion to reinforced concrete and recognizing that complete and certain protection is not possible, Mr. Amirikian believes that a new concept of design nevertheless is desirable. Based upon both impact penetration and blast resistance requirements the new concept would involve a so-called limit design which would use the full dynamic resistance of members under large plastic deformations. For vital structures—largely military—thick double roofs and 4-ft walls would provide maximum protection. For these structures and for others where the object is to minimize damage it is of utmost importance that framing has adequate support and anchorage capable of developing the ultimate strength of the reinforcement. In the final analysis, he declared, strong frames comprising structural floors and transverse walls become mandatory to provide the necessary resistance to strong atomic blasts. Prof N. Newmark (University of Illinois) afforded support of the limit design thesis in another paper, "Dynamic Behavior of Structures."

• **Chicago's public works**—The opportunity afforded by the large numbers of engineering visitors attracted to the Convention was firmly grasped. About a dozen papers described what is being done to make Chicago a better place to live in.

The city's $446 million comprehensive superhighway is forging ahead, according to V. E. Gunlock, Commissioner of Subways and Superhighways. Construction is well started on four projects. They are: The $12,000,000 Wacker Drive extension, to be completed next year; a $31,000,000 extension of the North Lake Shore Drive, to be completed in 1953; the $8,000,000 Congress Street expressway to be finished in 1954; and the $128,000,000 Northwest expressway, to be completed in 1957.

• **One big county project**—The 14.5-mile, $22,000,000 Edens Parkway—will be opened to traffic next year, said Wm. Mortimer, assistant superintendent of highways, Cook County, Ill. This 6-lane divided expressway will relieve congested traffic on the present U. S. Highway 41 leading to Milwaukee.

(*Continued on page 28*)



WING DOCKS—Building a B-36 bomber is largely an outside operation, thanks to the plane's great size. Even though construction takes place in sunny places like California and Texas, some work time can be lost due to bad weather. Losses are minimized by these unique structures (two units shown together) called wing docks. Dock is demountable; roof cantilevers to allow moving wing out, but is tied down at front with light removable members, to guard against wind uplift. R. W. McCleskey, of Consolidated Vultee Aircraft Corp., did the detail design work on the docks.

A. S. C. E. Chicago meeting . . .

(*Continued from page 27*)

Chicago's reputation as a profligate waster of wages is no longer justified said W. W. DeBerard, city engineer. While metered consumption has increased 180 mgd during the past 20 years, non-metered pumpage has decreased 217 mgd– a net reduction of 37 mgd. Chicagoans use an average of 234 gal of water per day, for which they pay 8c per 1000 gal. Last year's revenue to the 100-year-old water system was $18,400,000, compared with operating expense of $17,500,000, he said.

Chicago also provides good treatment of its sewage, according to Langdon Pearce, of the Sanitary District of Chicago. Four major plants furnish activated sludge treatment of domestic sewage for a population of over 4,000,000, plus 85% of industrial wastes having a populatoin equivalent of 3,500,000 more. Operating and maintenance costs of the sewage treatment plants totaled $8,250,000 last year. About $1,000,000 worth of heat dried sewage sludge was sold for fertilizer.

Other papers related to Chicago's regional planning and to its subsoils and the foundation problems that they cause. Looking to the future, Col. J. P. Campbell, district engineer of the Corps of Engineers' Chicago District, described the proposed Calumet-Sag navigation channel improvement–to provide a new Great Lakes-Mississippi River connection that would bypass the present channel through downtown Chicago. Even without the widening and deepening contemplated, the Calumet-Sag traffic is increasing at a faster rate than the overall traffic on the river system. Congress has authorized the work but has not appropriated the money–about $97-million. Plans and specifications are ready for an immediate start, Col. Campbell said. In like vein Col. John R. Hardin, division engineer of the Corps' Great Lakes Division told of the various measures, underway and contempalted, to check Lake Michigan erosion in the interest of better harbors and beaches.

In constructing the Chicago subway 50 ft under the La Salle St. railway station it was necessary to provide temporary supports for 85 columns supporting the building and permanent new caissons under 26 more. About twenty-four 10-ton screw jacks were inserted at each column to lift the train shed and tracks back up to grade as the clay subsoil under the footings settled during the subway driving. As much as 20 in. of settlement occurred in 24 hours, but at no time was the station affected more than ¾ in. After the subway was completed new column bases were poured and the jacks removed. The operation required around-the-clock supervision for more than three months, reported Dick Van Gorp, chief engineer, Department of Subways and Superhighways.

In constructing the foundations for the Delaware Memorial Bridge the two anchorages for the suspension span required some of the largest underwater operations on record. The west anchorage caisson was the largest in area ever built--95 x 221 ft. On the east anchorage the seal for the cofferdam required a continuous tremie pour of 27,000 cu yd, the largest ever made. Rea Admiral Carl H. Cotter (Retired) President, Merritt-Chapman & Scott Corp Described the work which has been covered in ENR articles (Jan. 19, 1950, p 26, and Jan 26, 1950, p 28). The third construction paper by George F. Flay Jr., Drilled-In Caisson Corp., also described a notable work that has been reported in these pages (ENR April 27, 1950, p 32)–97-ft dia sheetpile cofferdam for a water intake to a power plant on the Mississippi River at Venice, Ill. Its outstanding feature was the use of circular concrete wales, which permitted unobstructed work space.

• **Photogrammetry**–Airplane surveying by photography–has proved its worth on the extensions of the Pennsylvania Turnpike, said Frank J. Williams of the engineering firm of Gannett, Fleming, Corddry & Carpenter. A complete topographic map of a strip of ground 1 mile wide and 140 miles long was delivered in 145 calendar days for the eastern extension; for the western extension 70 days was required for a map of 68 miles.

To avoid the expense of elaborate cofferdams in the river, power plants and spillways can sometimes be built on the bank and the river later closed off by dumped embankment, said E. Montford Fucik, of the Harza Engineering Co. He described the Pentenwell hydro project of the Wisconsin River Power Co. as a case in point.

Airports of the future can be built with one or two parallel runaways thus saving substantially over the multi-directional layouts of the present. This was the conclusion to be drawn from three papers on airport standards by E. C. Crites and Isaac Ledbetter of the CAA; Milton W. Arnold of the Air Transport Association; and Ralph H. Burke, Chairman of the ASCE Committee on airport standards.

Engineering examiners hold 29th annual meeting

Nearly 100 delegates, representing 40 states, made up the registry of the 29th annual meeting of the National Council of State Boards of Engineering Examiners, held in Chicago Oct. 9-11.

Most of the three-day meeting was taken up with committee reports aimed at securing more uniform rules and regulations regarding the registration (licensing) of engineers. Considerable discussion centered on the value of written examinations, oral examinations and qualifying experience, in determining the qualifications for registration of engineers. Two other important problems brought out in committee reports are the controversial question of "registration by endorsement," and the handling of the "model" program for enrolling engineers-in-training, adopted at last year's annual meeting.

Several committee reports included surveys conducted during the past year of registration policies of the 52 member boards–the youngest of which is the District of Columbia.

• **What industry thinks**–During the past year the Committee on Effects of Registration set out to find out what industry thinks of the registered professional engineer. These are some of the points, as reflected in 174 replies from 277 organizations having large engineering staffs:

Industry, in general, believes that the registration of engineers is decidedly advantageous both to the public and to the engineering profession; and slightly advantageous to industry. It also is of the opinion, generally, that the registration of engineers is gaining increased public recognition, and raising the standards of engineering practice.

About two thirds of the replies indicated that they did not require registration of engineers for certain positions of responsibility; while nearly 80% did not recognize the registration of engineers by favoring their employment. But two out of three of the 174 companies replying to the questionnaire said they encouraged the registration of properly qualified employees.

• **New officers**–Russell G. Warner, vice president, United Aluminum Co., New Haven, Conn., was elected president of the council, succeeding Clarence L. Eckel, dean of engineering, University of Colorado. Professor C. S. Crouse, University of Kentucky, was named vice president. Two newly elected directors are: Stanley G. Palmer, dean of engineering, University of Nevada (Western Zone), and A. G. Stanford, vice president, Roberts and Co., Atlanta, Ga. (Southern Zone).

Pollution control state responsibility, sewage, industrial waste groups told

Washington meeting hears Wolman outline states' job in stream cleanup—Told of need for more data—New officers elected

John C. Bumstead
Associate Editor

Pollution control should be exercised at the lowest level of government that can handle the problem.

That means the states, according to one of the key talks presented to interested officials last week at the 23rd annual meeting of the Federation of Sewage and Industrial Wastes Association, at Washington, D. C. Principal speakers included Abel Wolman, professor of sanitary engineering at Johns Hopkins University; Mark Hollis, assistant surgeon-general, U. S. Public Health Service; W. N. Crune, New York University research assistant and Rolf Eliassen, MIT sanitary engineering professor.

Hitting hard for a "sensible" method of handling potentially conflicting pollution-abatement programs across the U. S., Dr. Wolman told his listeners in effect:

State agencies, interstate organizations and the federal government—in that order—should have their crack at cleaning up our disgracefully dirty streams, rivers and tidal waters.

But the higher agencies should only supersede or interfere when the lower one fails to do the job.

The states, therefore, have the primary responsibility.

• **Checkup needed**—Broadening his scope, Wolman pointed out that water development and conservation programs have one outstanding weakness:

"Nobody has gone back to test results that were anticipated or prophesied when the work was started. We should go back, check up, and create yardsticks to show what out projects have accomplished." Such a checkup, he added, should apply equally well to pollution-abatement activities.

• **End pork barrel**—Concerning water-use projects, there are certain startingly simple axioms that should govern the thinking of every intelligent citizen, Dr. Wolman emphasized. They are

1. Public money is limited. (It may be astonishing, but it's true, he said.)

2. Many public needs compete for the limited amount of public money.

3. Somebody has to make choices. Selection of projects, he urged, should be on a quality as well as a quantity basis.

• **Too much filth**—There are about 20,000 significant sources of pollution in the U. S. divided equally between municipalities and industry.

Mr. Hollis split the problem up like this:

1. Sewage from 6,000 municipalities has a population equivalent of about 30 million people.

2. Data on pollution load from 4,000 cities—serving 40 million—is incomplete or unavailable.

3. Organic wastes are produced by 5,000 industries. Of these 2,000 discharge wastes equivalent to 40 million people. The remainder produce organic wastes of which there is no measure.

• **The job to do**—At least 6,000 new sewage-treatment plants, and replacements and enlargements of existing facilities are needed, Hollis summarized. But 1,000 cities have not determined their disposal requirements.

New plants, replacements or enlargements should be built at nearly 3,000 industries. But the waste-disposal needs for more than 5,000 industries are unknown. These must be correlated with respective stream uses.

• **Looking backward; going forward**—Capital outlay for public sewage-disposal construction—from 1915 to date—has totaled almost $9 billion. This is indexed to 1949 dollar value. To this figure must be added $1 billion for maintenance and repair and 10 billion for interest and operating charges.

Last year's investment of $277 million—based on 85% of prewar dollar—broke all existing records (ENR March 23, 1950).

To satisfy more obvious needs by 1960, Hollis recalled that the Twentieth Century Fund study on American capital requirements calls for a $4.25 billion expenditure for municipal sewage treatment. This is based on 1950 dollar.

With a conservative estimate of industrial needs about the same, the total investment will be more than $8 billion in 10 years.

This means that a rate of expenditure must approach three times that of 1949—$800 million annually, he emphasized.

• **Radioisotope safe**—Radioisotopes in increasingly greater quantities are being discharged into sewers from hospitals, research laboratories, institutions and miscellaneous industrial establishments.

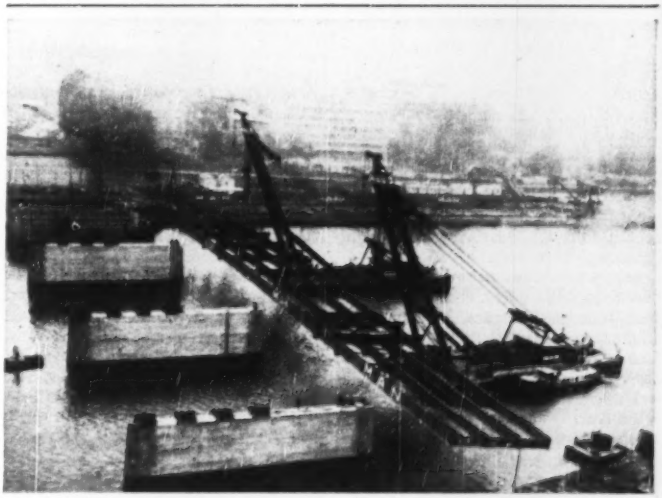
What then is the effect of these materials on microbiological organisms in sewage and streams? W. N. Grune and Rolf Eliassen reported on the effects of one such isotope. Their conclusions:

Radioactive phosphorous (P^{32}) in concentrations at or below 10 millicuries per liter exerts no significant effect on the following parameters in the first stage of biochemical oxidation of sewage:

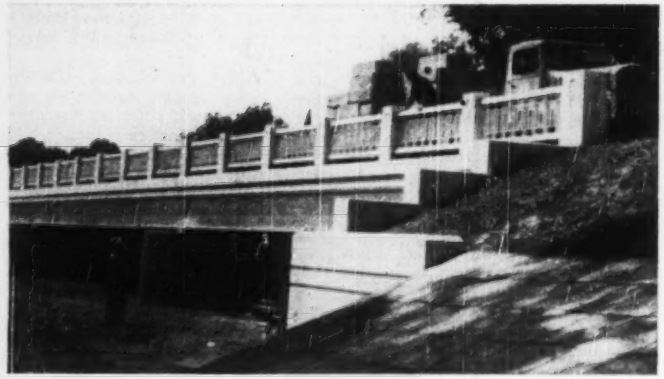
1. The reaction-velocity constant of biochemical oxidation, k.

2. Ultimate first-stage or carbonaceous BOD value, L_a.

(Continued on page 30)



FRANKFURT PEACE BRIDGE—Last of five bridges across the Main River at Frankfurt, the Friedens Bruecke replaces the Wilhelms Bruecke, named after the last German emperor. Giant floating cranes here lift a girder and floorbeam assembly for half of the bridge onto piers. The frame which was pre-assembled on shore, is 440 ft long and weighs more than 340 tons. (Wide World photo)



FULL-SCALE TEST—Because of the fact that this bridge in Michigan's Allegan State Forest won't have a connecting highway for a year or so, the Michigan state highway department is using it for some valuable full-scale loading tests. At left, a loaded truck rolls across a span; engineers underneath take various strain-gage measurements (right). Each span in the bridge differs from the others in some construction details. The highway men are particularly interested in a spiral shear-developer in one span; they hope to prove that the steel spiral embedded in slab concrete, makes the roadway act as a top flange for the beam to which the spiral is welded. Tests are expected to be completed late this year. (Ackley photos)

Start co-op housing project for N. Y. electrical workers

Work is now under way on the first section of Electchester, a $20,000,000 co-operative housing project in N. Y. City, sponsored by the Joint Industry Board of the Electrical Industry. Paul Tishman Co., Inc., is contractor.

The project, sponsored by principal employers and Local No. 3, International Brotherhood of Electrical Workers, AFL, represents the first combined effort of labor and management to finance moderately-priced housing facilities for its workers.

Declared by New York State Housing Commissioner Herman T. Stichman to be the largest building operation yet undertaken under the state's limited dividend mutual ownership housing program, Electchester will accommodate 2,141 families, and will cover 60 acres of the old Pomonok Country Club land, bounded by Kissena Boulevard, 71st Avenue, 164th Street and 65th Avenue.

Initial occupancy of the first section, containing 383 suites, is scheduled for next June. As designed by Benjamin Braunstein, architect, it will comprise four 3-story buildings and three 6-story elevator structures.

Under partial tax exemption and a self-financing plan in which resources of the Joint Board are being used to provide mortgages at 3% interest, average carrying charges per room per month are not expected to exceed $13.79, after down payments of approximately $500 per room. These monthly payments will cover all operating costs, mortgage amortization, interest, taxes, heat and repairs.

The buildings will be of colonial design, constructed of wood beams and steel framing, with fireproof brick and cinder block walls. They will cover only 17.3% of the 10¼-acres of land area in the first residential section. Fireproof steel and masonry enclosed garages will also be constructed, supplemented by open parking areas the balance of tenants' cars.

Industrial wastes . . .

(Continued from page 29)

3. 5-day BOD value, the conventional index used at sewage-treatment plants.

4. Value of lag period, c, of the unimolecular reactive curve.

Experimental results, give further evidence that a tentative tolerance level of 10^{-7} microcurie per liter is safe from the standpoint of biochemical oxidation of organic matter in streams or other water courses.

It has been successfully demonstrated, they say, that ordinary tests of sanitary significance can be carried out under radioactive conditions when proper precautions and safety measures are observed.

• **Sewer-service charges**—Sewer-service collections—from about 450 cities—totaled more than $25 million in 1948, M. W. Tatlock, consulting engineer, Dayton, Ohio, reported.

At Camden, N. J.—the largest city to adopt this financing plan in 1949—more than $227,000 was collected in less than a year.

Giving credit to the Indiana's health-department engineers, Tatlock summarized their recent report on sewer-service practices at 45 cities in the State: Customers range from a minimum of 80 to a maximum of 33,000; 78% of the cities base their charges on water consumption, 11% have fixed charges, and 11% collect on number and type of construction; annual charge range from $1.32 to $30.00 per customer.

• **Management**—New officers are: R. E. Fuhrman, president; Ernest Boyce, vice-president; W. W. DeBerard, treasurer; W. H. Wisely, executive secretary—Editor.

Association Awards: W. W. DeBerard, Chicago City engineer, honorary member; D. A. Okun, Malcolm Pirnie Associates—The Harrison P. Eddy medal for an outstanding contribution in research; C. E. Keefer, deputy sewerage engineer, Baltimore—The George B. Gascoigne medal for an outstanding contribution in plant operation; M. M. Cohn, sanitary engineer, Schenectady—The C. A. Emerson medal for meritorious service to the Federation; and R. F. Weston, R. G. Merman and J. G. DeMann, all of the Atlantic Refining Co. Philadelphia—the Industrial Wastes medal for industrial waste control.

WAGE SCALES IN 77 CITIES

Reports on union wage scales in the building trades in 77 cities are obtainable without charge from the Bureau of Labor Statistics, U. S. Dept. of Labor, Washington 25, D. C. The listings show July 1, 1950 union rate, by trade as well as the weekly hours, of work before overtime rates become effective.

CONSTRUCTION BUSINESS

Regulation X to cut housing starts 30%

Regulation X—the new housing credit curb which went into effect last Friday—is expected to slash the number of housing starts by more than 30% next year.

That is Regulation X's primary purpose: to reduce the number of starts from this year's record 1,250,000 (estimated) to 800-850,000 in 1951.

For now, the housing controls cover only (1) credit involved in the construction of one-and-two-family dwellings started after Aug. 3, and (2) homes built earlier with U. S. help.

Federal Reserve and HHFA are already working on restrictions on multi-family rental units. Later on, curbs on construction credit for industrial and commercial buildings will be applied. Both are expected to come through by the end of the month.

Terms laid down in Regulation X are similar to those in effect for government-financed work in 1948.

At that time, a prospective home owner could get the Federal Housing Administration to insure the mortgage on a house costing up to $6,000 for as much as 90%; if the house cost more, he got an 80% guarantee.

For an ex-GI, however, the Veterans Administration would guarantee an additional portion of the mortgage. In some cases, veterans got mortgage money for 100% of the purchase.

Violations of credit regulations bring fines up to $5,000, or one year imprisonment or both. Lenders violating the rules also run the risk of losing their "license" to engage in housing credit business through board revocation of their registration.

COMPUTING DOWN PAYMENTS

Here is how the new down payments are computed:

Property value	Minimum down payment
$2.5- 5,000	10%
5 - 9,000	$500 + 35% of value over $5,000
9 -15,000	$1,900 + 40% of value over $9,000
15 -20,000	$4,300 + 80% of value over $15,000
Over 20,000	$8,300 + 90% of value over $20,000 but not less than 50% of value

Veteran's down payments are somewhat lighter, taking the following pattern:

Property value	Minimum down payment
Up to $5,000	5% of value
$5- 6,000	$250
6- 9,000	$250 + 25% of value over $6,000
9-12,000	$1,000 + 30% of value over $9,000
12-15,000	$1,900 + 55% of value over $12,000
15-20,000	$3,500 + 75% of value over $15,000
20-24,250	$7,300 + 85% of value over $20,000
Over 24,250	45% of value

Housing are down to 115,000 for September

After topping 140,000 for four months straight running, housing starts are 115,000 for September according to the calculations for the Bureau of Labor Statistics. This brings the 9-month total up to 1,105,000. The September starts are 8% above last year while the total starts to date have run 48% higher than last year.

Revised figures for earlier months include: March 117,300, April 133,400, May 149,100, June 144,300. The estimate for July is 144,000 and for August, 141,000.

The average of starts per month for the previous highest year on record, 1949, is 85,425.

Construction backlog tops $50 billion

The proposed construction backlog crossed the $50-billion mark in September to reach an all-time high of $50,357,499,000.

This is an inventory of engineering construction projects proposed, or in the planning stage, which have not yet been put under contract for construction. These are the projects reported in ENGINEERING NEWS-RECORD as proposed work.

This backlog comes from all parts of the country, in New England $2.4 billion, in Middle Atlantic states $12.3 billion, in the South $5.8 billion, in the Middle West $8.1 billion, in the Middle West $8.1 billion, in the states West of the Mississippi $13.1 billion, in the Far West $8.6 billion.

New York has the biggest backlog, $6.39 billion. Texas is second with $5.59 billion, California is third with $4.81 billion. Pennsylvania has a $2.96-billion backlog, Ohio, a $2.54-billion backlog, Illinois a $2.48-billion backlog.

Waterworks and sewerage projects together top $3.5 billion, roads and bridges $6 billion, earthwork, irrigation, drainage $7.3 billion, public buildings $11.7 billion, industrial buildings $4.9 billion, commercial buildings and mass housing $6.8 billion, and unclassified construction projects top $10 billion.

The public works backlog is now $33.3 billion and the private heavy construction backlog $17.1 billion.

Canada has an $8.3-billion backlog, $5.1 billion in public works, $3.2 billion for private heavy construction.

Municipal financing cost drops with tax rise

Rising federal taxes on income, plus excess profits taxation have resulted in lower interest rates on municipal bond offerings throughout the United States. In July, before the Korean crisis, municipals were selling at around their pre-war prices, giving a yield of 2.09% on an average. In August they were down to 1.90%.

This puts municipals on their way back to the levels of their World War II yields. The tax exempt features of these offerings make them attractive even at these lower rates. And from the public official's point of view now is a good time to do their construction financing.

Industrials, utilities and railroads are continuing with relatively little change in yield either on a monthly comparative basis (August as against July 1950) or relative to last year.

U. S. Governments continue to show an increase in yield, however, as a result of the still unresolved impass between the Treasury and the Federal Reserve. Under the Reserve Board's policy of increasing interest rates in an effort to avoid too cheap money during a period of inflation danger, average yields on governments have increased during the year from 2.17% in January to 2.35% in August.

Unless the Reserve Board can be brought to heel by this year's end, government borrowing to finance the war effort will be carried on at rates generally higher than those which prevailed during World War II.

Bond yields—per cent

	Govt.	U. S. Treas.	Municipal	Industrial	Pub. Util.	Railroad
1939		2.41	2.76	2.64	2.83	3.39
1940		2.26	2.50	2.57	2.75	3.26
1941		2.05	2.10	2.50	2.69	3.16
1942	2.27	2.09	2.36	2.54	2.71	3.17
1943	2.29	1.98	2.06	2.55	2.63	3.10
1944	2.38	1.92	1.86	2.58	2.64	3.01
1945	2.24	1.66	1.67	2.50	2.59	2.73
1946	2.19	Disc	1.61	2.44	2.50	2.59
1947	2.24		2.01	2.52	2.59	2.62
1948	2.43		2.40	2.70	2.83	2.89
1949	2.28		2.21	2.53	2.69	2.71
1950						
Jan	2.17		2.08	2.52	2.59	2.62
Feb	2.22		2.06	2.43	2.59	2.63
Mar	2.25		2.07	2.43	2.59	2.62
Apr	2.28		2.08	2.44	2.60	2.63
May	2.30		2.07	2.46	2.62	2.65
June	2.33		2.09	2.47	2.62	2.66
July	2.34		2.09	2.51	2.66	2.68
Aug	2.35		1.90	2.50	2.62	2.63

BIDS AND BIDDERS

(Major project news received after Construction Reports, page 76, went to press.)

Natural gas pipe line—Texas Illinois Natural Gas Pipeline Co., Chicago, Ill., awarded contracts for the construction of $98,966,700 natural gas pipe line from near Houston, Tex., to Joliet, Ill., transversing Texas, Arkansas, Missouri and Illinois. Contracts have been awarded to Midwestern Constructors, Inc., Tulsa, Okla., Bechtel Corp., San Francisco, Calif., and H. C. Price Co., Bartlesville, Okla.

Irrigation dams—South San Joaquin Irrigation District, Manteca, and Oakdale Irrigation District, Oakdale, Calif., plans Donnells, Beardsley and Tulloch Dams, with appurtent power houses, on the Stanislaus River. Estimated cost is $40,000,000. International Engineering Co., San Francisco, is engineer.

Sewers—East Side Levee & Sanitary District, East St. Louis, Ill., will open bids November 15 for trunk and lateral sanitary sewers to cost $7,000,000 and on November 17 for trunk relief sewers to cost $4,000,000. Horner & Shifrein, St. Louis, Mo., are consulting engineers.

Hospital—Department of Public Works, City of New York, has plans underway for 11 story Tuberculosis and Chronic Disease Hospital on Welfare Island to cost about $21,300,000. James W. O'Connor and James F. Delaney, New York, N. Y. are architects.

Generating plant—Louisville Gas & Electric Co., Louisville, Ky., will improve and enlarge Paddy's Run Generating Plant, at Louisville to cost about $8,600,000. Work will be done by own forces over a five to ten year period. Pioneer Service & Engineering Co., Chicago, Ill., is engineer.

Road—Bureau of Public Roads, Washington, D. C., will reconstruct 38-mile highway north from Seward, Alaska to intersection with Turnagain Road. Estimated cost is $7,500,000 and work is planned for 1951.

Subway—Toronto Transportation Commission, Toronto, Ont. will take bids December 15 for Yonge Street Subway, contract S-54. Work includes subway from Muir Memorial Tunnel Portal to north side of Imperial St., including Davisville Yard.

Sewage treatment plant—City of Sacramento, Calif., will hold bond election November 7 to vote on $4,400,000 for sewage treatment plant. Fred Klaus is city engineer.

Generating plant—San Antonio Public Service Board, San Antonio, Tex., plans doubling capacity of power plant to cost $7,000,000. Gibbs & Hill, Inc., New York, N. Y. is consulting engineer.

Court House—Scott County, Davenport, Ia. plans to vote on $2,900,000 bonds November 7 for court house. Total cost will be $4,400,000. Dougher, Rich & Woodburn, Des Moines, are architects. Arthur H. Ebeling, Davenport, is engineer.

New York State thruway—Lane Construction Corp., Meriden, Conn., was low at $3,659,497 for 7.77 miles Catskill Thruway (Kingston-Saugerties Section) in Ulster County, when New York State Department of Public Works, Albany, N. Y. opened bids October 11.

High school—Board of Education, Eugene, Ore. has approved plans for $3,000,000 high school. Graham B. Smith, Eugene, is architect.

Department store—Sears Roebuck & Co., Chicago, Ill. awarded contract for the construction of department store in Chicago, to James Stewart & Co., Chicago, Ill. Estimated cost is $2,500,000. Carr & Wright, Chicago, are architects.

Upper Spavinaw Dam—Guy H. James, Oklahoma City, Okla., was low at $2,407,505 for constructing Upper Spavinaw Dam, when Board of Commissioners, City of Tulsa, Okla. opened bids October 13. W. R. Holway, Tulsa, Okla., is consulting engineer.

Apartment—American National Bank, Chicago, Ill., awarded contract for 17-story apartment in Chicago to Lloyds Builders, Chicago. Estimated cost is $2,500,000. L. R. Solomon & Associates, Chicago, are architects. H. S. Nachman and Alfred Benesch, both Chicago, are engineers.

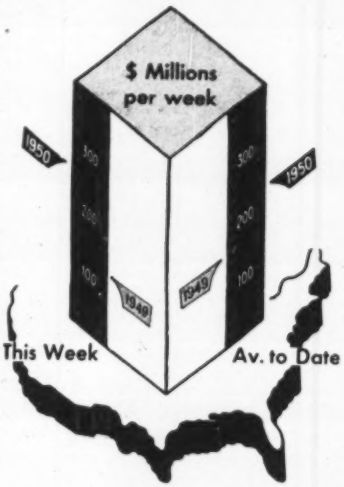
School for blind—Ohio Department Public Works, Columbus, will open bids November 16, for Ohio School for Blind in Sharon Township, near Columbus. Cost will be about $3,000,000. Outcault, Guenther & Associates, Cleveland, are architects. Bids for this project were taken September 21 and rejected. The low bid for general contract was $2,067,000.

Office—Gulf Insurance Co., Jacksonville, Fla. plans office, in Jacksonville to cost $3,000,000.

COSTS AND VOLUME

ENR INDEX NUMBERS

Index Base = 100		1913	1926	1949
Constr. Cost.	Oct. '50	256.91	256.91	112.03
Bldg. Cost...	Oct. '50	396.23	214.19	112.63
Volume	Sept. '50	390	171	139



Activity This Week

As reported to ENR (in millions of dollars)

Amount of contracts let

	Week of Oct. 19, '50	Cumulative 42 wks. 1950	1949	% chge
Federal	$4.8	$995.1	$880.2	+7
State & Mun.	72.7	3,019.6	2,591.7	+17
Total Public	$77.5	$4,014.7	$3,471.9	+16
Total Private	183.3	5,655.1	3,096.9	+83
U. S. Total	**$260.8**	**$9,669.8**	**$6,568.9**	**+47**

Contracts by type of work

	This Week	Cumulative 42 weeks 1950	1949	% chge
Waterworks	$2.9	$185.7	$172.8	+7
Sewerage ..	7.3	222.0	218.0	+2
Bridges	19.4	312.9	283.8	+10
Highways ..	22.7	1,035.5	767.9	+35
Earthwork, Waterways	2.2	335.6	444.1	−24
Buildings:				
Public ...	19.1	1,357.4	1,001.9	+35
Housg., pub.	13.1	254.0	330.1	−23
Housg., priv.	32.4	2,767.3	1,413.7	+96
Commercial	13.2	807.8	484.6	+67
Industrial .	29.3	1,261.5	842.7	+50
Unclassified	108.2	1,130.1	609.1	+85

NOTE: Minimum size projects included are: Waterworks and waterway projects, $28,000; other public works, $50,000; industrial buildings, $68,000; other buildings, $250,000.

New capital for construction

	Cumulative 42 wks. 1950	1949	% chge
NON-FEDERAL .	$522.0	$432.5#	+21
Corporate Securities	1,815.3	1,942.9	−6
State and Mun.:			
Excl. housing..	1,770.9	1,787.6	−1
Housing	543.3	625.0	−13
FEDERAL	2,829.1*	1,711.7#	+65
Total Capital ...	**$7,480.6**	**$6,499.7**	**+15**

Mandatory cuts have been removed.
* Includes all approp. for Oct. 1949.

CIVIL DEFENSE

From shadow to substance—The District of Columbia is putting in its closet a skeleton civil-defense organization that is ready to spring to life once a $100,000 Congressional appropriation becomes available. Gordon R. Young, District engineer commissioner last week announced to the Board of Trade his plans for a volunteer organization in line with recommendations of the National Security Resources Board. Heading civil defense public works units is P. Y. K. Howat, with Alan Mills, architect, ready to study air-shelter problems. These arrangements are made to fill the gap until a full-time director takes over the District's civil defense.

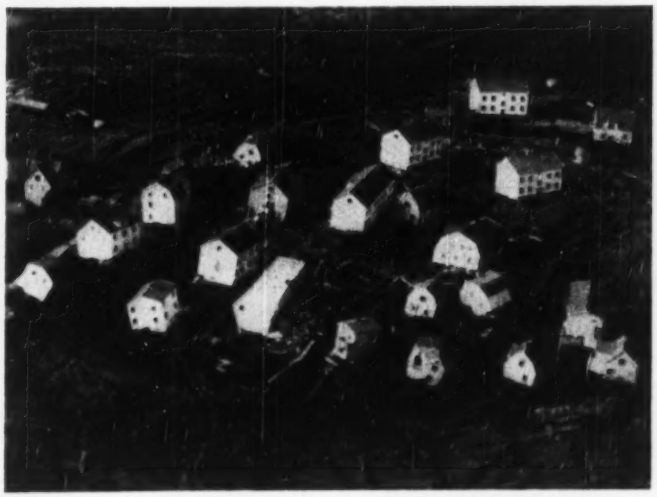
Getting the gates—If subways are to be safe air-raid shelters for New Yorkers they must be given gates—18 giant floodgates to keep rivers from flooding the subway system in the event of bomb damage to under-river tunnels.

Sidney H. Bingham, chairman of the Board of Transportation has asked $3,000,000 for the gates themselves, $1,865,000 to readjust signals and line equipment, and $335,000 for changes in power cables.

As designed under Bingham's direction the mighty water valves would measure 40 by 15 ft in double-track tubes, and be made of steel. Once the Board of Estimate gives its approval, some of the gates could be in place in six months time.

Canadian contractor cooperation—Word comes from Canada that the Canadian Construction Association has appointed a committee to work with federal, provincial and local civil defense groups in planning for debris-removal and restoration of facilities. Col. G. E. Crain, Ottawa contractor, heads the CCA committee. Affiliated local groups are being asked to form civil defense committees to carry out the national committee's objectives, according to Robert Drummond, Toronto, president of the association.

The bomb and you—Edward J. Kehoe, chief of the fire and accident branch (New York) of the Atomic Energy Commission addressed firefighters and traffic engineers of the International Municipal Signal Association meeting in New York to discuss special atomic-attack problems. Said Kehoe: Under emergency conditions, fire fighting and wrecking crews could take without permanent harm some 500 times as much radiation as the annual tolerance level of absorption allowed employees in atomic plants. At Hiroshima and Nagasaki, Kehoe pointed out, all those killed by radiation received their lethal doses within seconds after the bombs were detonated. In both cities there was no damage to human beings from residual activity, he said. According to Kehoe, a change of crew with reasonable frequency would meet normal fire-fighting or road-clearing crew needs.



SOAKED CLAY FLOWS—Homes in the town of Surte, north of Guthenburg, in northern Sweden, lie at crazy angles as they slide with underlying earth toward Goeta River. Clay stratum had become unstable after weeks of heavy rains. The former site of the town is a canyon 50 ft deep and 600 ft across. About 40 homes toppled into the river. (Wide World Photo)

Ohio cities facing anti-pollution action

Health director asks attorney general file against 20 cities; Youngstown's financial impasse may bring fine.

Dr. John D. Porterfield, Ohio's health director, has asked Attorney-General Herbert S. Duffy to prepare legal action against 20 cities that have not taken "reasonable action to correct a total lack of sewage facilities" since the passage of Ohio's anti-pollution law Aug. 25, 1949.

Youngstown heads the list of cities. A $10,000,000 plan for a sewage treatment plant has been stymied there by a dispute between the council and city administration over the proper method of financing. One result of the dispute has been the loss of a $265,000 interest-free federal loan for planning. The issue: public bidding for bonds vs. a negotiated bond sale.

Ohio's anti-pollution law fines municipalities $500 for each offense, stipulating that a separate offense shall have been committed for each thirty-day period the pollution continues.

Cities other than Youngstown facing state action are: Sandusky, Zanesville, Tiffin, Painesville, New Philadelphia, Coshocton, Conneaut, Warren, Middletown, Niles, Cambridge, Campbell, Struthers, Sidney, Dover, Athens, Logan, Bellevue, and Nelsonville.

• **Old law exempts 12**—"There are 41 cities in Ohio that have no pollution treatment plants whatever," Dr. Porterfield said. "Twelve of these are exempt from immediate action because an old law says that cities along the Ohio River cannot be required to construct disposal plants as long as up-river cities and cities in other states dump sewage into the stream."

"Nine others have demonstrated that they are acting to end pollution. We have asked the attorney general to proceed against the other 20."

Cities considered to have "taken reasonable action to correct their situation" are Cincinnati, Hamilton, Steubenville, East Liverpool, Lorain, Ashtabula, Marietta, Uhrichsville-Dennison, Girard, Defiance, Kenton, and Miamisburg.

Labor day record

At Hungry Horse Dam, in Montana, Labor Day was a real labor day. In fact, it was a day when construction crews broke concreting records—6,618 cu yd in 24 hours. The highest previous 24-hour pour was 6,356 yd.

Monongahela Magic

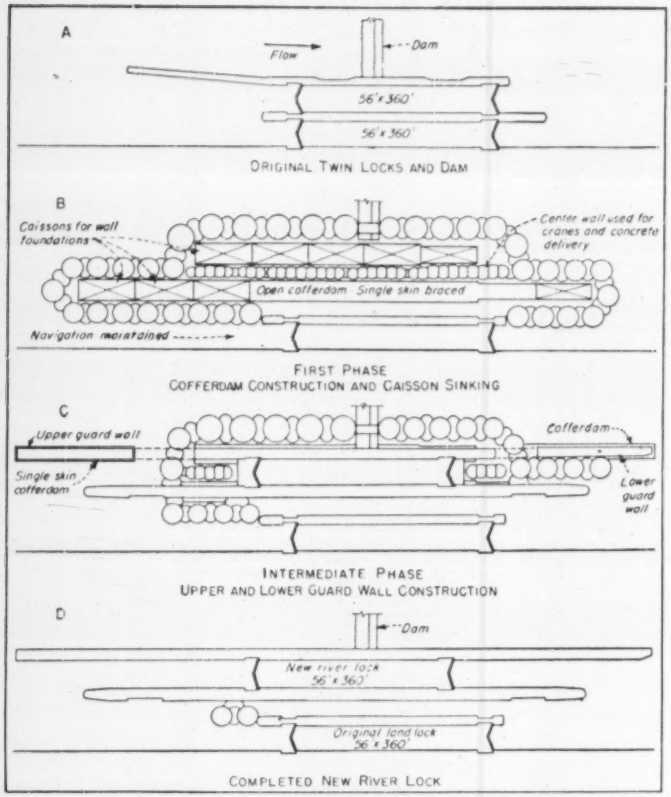
F. J. Larkin
Contracting Division, Dravo Corp.
Pittsburgh, Pa.

LOCK WALLS and cofferdams are being given a fast shuffle on the Monongahela River above Pittsburgh while a revamping trick is performed on 44-year-old Lock 2. Twin 56x360-ft locks are being transformed to one 110x720-footer landward and a 56x360-ft chamber outside—all while river traffic is kept moving throughout the entire performance.

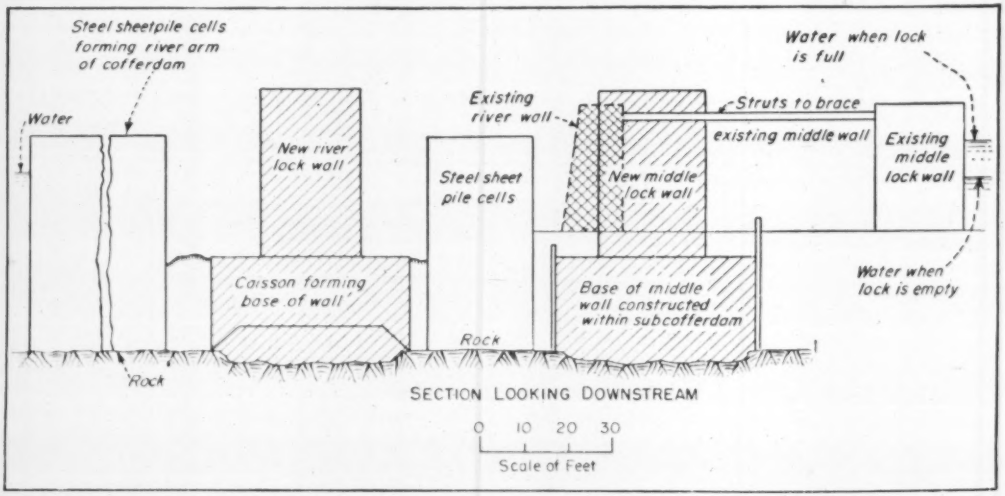
Because of the possible unstable condition of the old middle lock wall, which is not founded on rock but rests on a concrete mat supported by wood piles driven in the sand and gravel beneath, special steps had to be taken during construction by the contractor, Dravo Corp., Pittsburgh, to prevent loss of material from beneath the existing structure and to brace the lock wall against lateral movement.

Constant passage of heavy river traffic through the land lock resulted in close navigational clearances, especially in the building of the cofferdam.

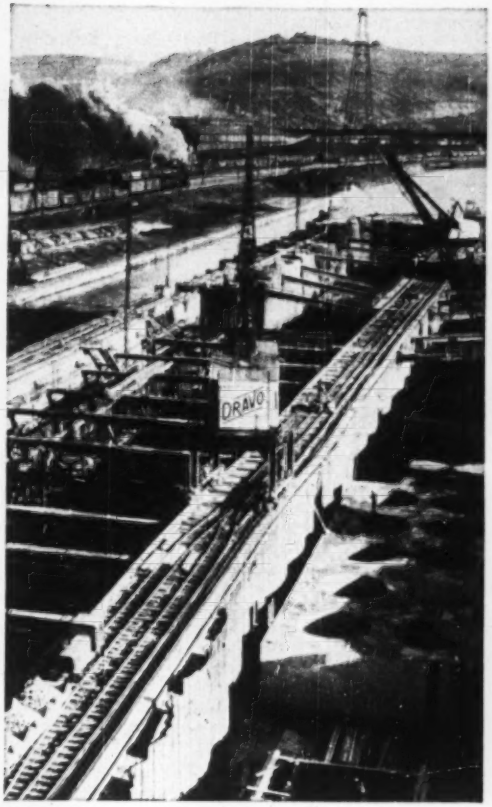
The existing structure consisted of two locks, side by side, each 56 ft wide by 360 ft long. The first phase of the



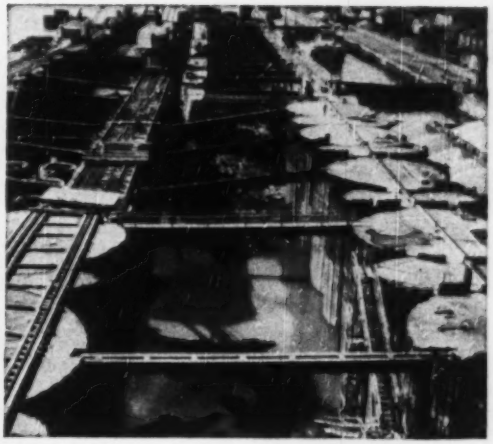
CONSTRUCTION SEQUENCE has brought locks through first and intermediate phases to completion of new river lock. New land lock remains to be finished.



OLD, NEW AND TEMPORARY WALLS, shown in section, crowd close showing no great wealth of work space. Existing lock wall kept in use had to be braced; so did cofferdam cells that were made too small to be stable due to space limitations.



AN OPEN CAISSON of reinforced concrete is ready to be sunk for the new riverward wall as lock-wall forms are built on another.



STRUTS take thrust of water in operating land lock (right).

WORKERS CLEAN loose shale off bedrock under open-dredged caisson before it is filled with concrete.

improvement project consists of building a new riverward lock chamber of that same size. This entails removing the present riverward wall and a portion of the river lock floor and building two new lock walls. Eventually, the existing middle wall will be removed and a new 110-ft wide by 720-ft long landward chamber will be constructed.

A sheet steel pile cellular cofferdam, 56 feet deep and requiring some 6,000 tons of steel, has been built to unwater the area during construction. A diaphragm type cellular cofferdam was driven through the middle of the new lock for mounting cranes and to carry tracks for transporting concrete.

Timber struts 20x30 in., each reinforced with two 12-in. steel beams, are used to brace the old middle lock wall. These struts are placed on 30-ft centers between the middle cellular cofferdam and the old middle lock wall. Struts also are used between cells of the cofferdam arms above the upstream gates of the existing lock (see photo above).

• **Concrete caissons**—The new riverward wall is being built on one 36½-foot by 116-ft and four 44½-ft by 116-ft reinforced concrete open caissons. Within the main cellular cofferdam these caissons are sunk in line approximately 20 ft to solid rock.

The new middle wall will be founded on four similar caissons, three upstream and one downstream of the existing middle wall. In the area adjacent to the existing middle wall, however, the foundations have to be placed inside a single-skin, braced sub-cofferdam, 27 ft deep. Use of open caissons in this area would have exposed the existing lock to the hazard of undermining due to blow-ins into the caissons and probable loss of material under the structure as the caissons were being sunk. Three sets of bracing, consisting of double 16x16-in. timbers and 30-in. WF steel walers, are used at three levels in the sub-cofferdam.

Twelve-inch concrete blocking is used also at the elevation of the top of the sub-cofferdam, between it and the river wall caissons. This carries the thrust of the existing middle wall through the sub-cofferdam and into the new riverward wall.

Two gantry cranes with travelers are mounted on the middle cofferdam astraddle 36-in. gage tracks. These two rigs handle concrete from cars on the same tracks, did all the sub-cofferdam work and helped sink the concrete caissons. On the outer, or riverward, arm of the cofferdam four whirling cranes are used. Most of the excavation was loaded by these rigs into scows for disposal.

Other work in the project includes building an operations building and floodway bulkhead and installation of operating machinery, piping, power and lighting system. The project was begun in December 1948, and anticipated completion in mid-1951. Dravo's low bid on the project amounted to $7,263,136.

R. A. Thompson is resident project superintendent for Dravo and R. W. Comfort is resident engineer for the Corps of Engineers.

How to build dry basements

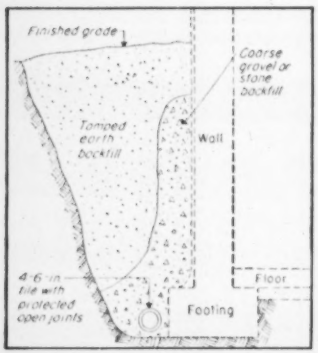
WATER gets into basements through leakage, capillary action or condensation. Remedying these conditions after a house has been occupied may be very difficult and expensive. On the other hand, you can save the owner a lot of money and trouble by taking the proper precautions during construction.

The Housing and Home Finance Agency Div. of Research says you can get a dry basement if you select the proper site, provide suitable surface and subsurface drainage, use water-resistant or waterproof construction and install insulation properly.

• **Selection of site**—HHFA recommends placing the house on the highest point on a given plot of ground, especially in localities where the water-table is high. You can avoid trapping water against the uphill side of a basement by turning the building diagonally to the hill.

• **Surface drainage**—The finished grade should be sloped so that the run-off will be away from the basement. The run-off from downspouts should be diverted away from walls by the use of splash-blocks, gutters, or underground drain tile.

• **Subgrade drainage**—Drain tile may be installed around the footings to free the surrounding soil of excess water. A porous medium—uniformly sized gravel or crushed stone of preferably 1-in. minimum size—should be provided around the tile and against the wall. To keep out pebbles and earth, the tile should be covered with wire mesh or burlap or similar screen.



SUBGRADE DRAINAGE is facilitated by installation of a tile drain.

A base of crushed gravel, tile or equivalent material should be used under a basement floor to reduce capillarity and provide insulation, which can be helpful in preventing condensation. Where the groundwater elevation is high, a crushed-stone fill with tile drain may be inserted to relieve the uplift pressure.

• **Water-resistant construction**—HHFA points out that basement walls and floors may be constructed highly resistant to leakage without the necessity of additional waterproofing treatment. A good grade of concrete, competently placed and worked into the forms for walls and floors, for example, should be impervious to leakage and have little capillarity. Brick or masonry walls of several wythes, or thicknesses of units, may be highly resistant to leakage if pargeting is installed between the wythes and the units are laid with solid joints.

• **Waterproof construction**—In actual practice, HHFA says, the degree of waterproofing is found to vary considerably, some methods being only equivalent to good water-resistant construction. Quality of materials and skill of application are prime factors.

HHFA considers the application of a bituminous membrane superior to a bituminous coating. The membrane will ordinarily prevent leakage, penetration by capillarity and water vapor.

When installed during construction, it is generally placed on the outside of the wall and in the floor slab. It is made as continuous as possible, using a hot asphalt or cold-tar pitch and several layers of bituminous-saturated cotton or felt.

When included in a floor slab, the membrane is placed over a thin concrete slab, or over tile or concrete units, to which a mortar coating has been applied to form a smooth surface. The mortar should be thoroughly covered with a hot bitumen bonding coat. The fabric should then be applied with sufficient amounts of lap and pressed down to eliminate voids and obtain 100% adhesion to the surfaces. Afterward, the floor surface should be covered with a structural slab.

Where the membrane is exposed above ground on the outside of the wall, a protective coating, such as 1 in. of mortar, should be applied. A covering is necessary sometimes below ground level also, to prevent damage that would destroy the membrane.

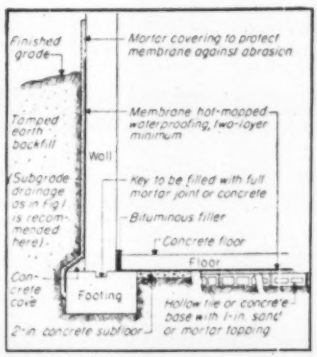
• **Insulation**—The relative humidity in a basement is usually high, and the temperature differential between the inside and outside surfaces of the basement wall is small. Furthermore, there is little heat flow from the air outside or down from the house. Therefore, the wall and floor surfaces may readily approach the dew point temperature of the basement air, and, as a result, condensation may take place.

If condensation should occur after a basement has been built, the condition may be relieved by proper ventilation, heating, or by dehumidification. The last can be brought about with hygroscopic salts or with mechanical refrigeration units.

• **Dampproofing courses**—A dampproofing course should always be installed in a masonry wall to prevent capillary water from rising above the basement level. Usually, this course is placed from 6 to 18 in. above the finished ground line. It may consist of a layer of slate, tin, copper, or heavy roofing felt laid flat in mortar across the full width of the wall.

A dampproof course may be installed directly above the footing to reduce dampness in the basement caused by capillarity through the footing. This is usually effective where the outside of the wall has been water-proofed with a bituminous coating and where a gravel fill has been installed under the floor. Thus, the only spot vulnerable to capillary moisture would be the contact with the footing.

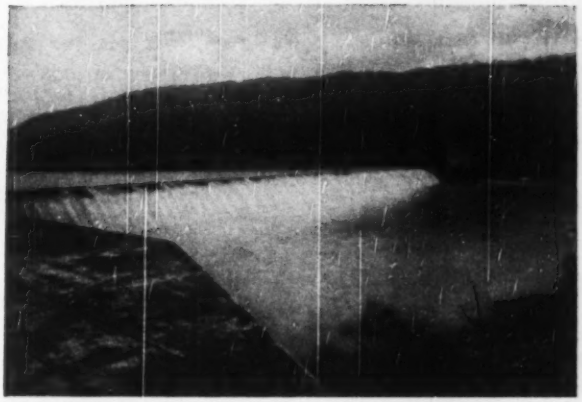
Full details of HHFA recommendations are given in an article, "Prevention of Dampness in Basements," by Perry H. Petersen, Technical Bulletin No. 14, Division of Information, Housing and Home Finance Agency, Washington 25, D. C.


Finished grade
Mortar covering to protect membrane against abrasion
Tamped earth backfill
Membrane hot-mopped waterproofing, two-layer minimum
Wall
Subgrade drainage as in Fig. 1 is recommended here)
Key to be filled with full mortar joint or concrete
Bituminous filler
Concrete floor
Floor
Concrete cove
Footing
Hollow tile or concrete base with 1-in. sand or mortar topping
2-in. concrete subfloor

WATERPROOF CONSTRUCTION utilizes membranes on walls and in floors.

Hales Bar Dam: Rebuilt and ready for more power

A. H. Weber
Project Manager, TVA,
Hales Bar Dam

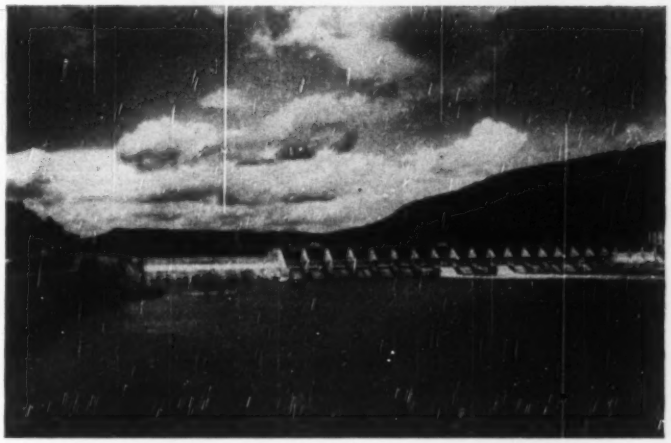


BEFORE its recent face-lifting Hales Bar was an overflow dam with flashboards as its only means of discharge control.

THERE isn't too much left of the original Hales Bar Dam. Bought by TVA in 1939, the Tennessee River structure was treated to an extensive grouting of its notoriously leaky limestone foundation in 1941 (ENR, Nov. 6, 1941, p 78). And now it has had its open crest cut off and rebuilt with gates, to increase navigation depth and to add control of spillway discharge for power production.

Net effect of this latest face-lifting was to raise the reservoir 4.75 ft, assuring an 11-ft navigation channel through Chattanooga to the north and providing regulated flow for power that will permit installation of two new 24,000-kw generators in an authorized extension of the 40-year-old hydro plant.

The original concrete gravity overflow dam was lowered 10 ft over 788 ft of its 1,200-ft length. Then this length was divided into 17 spillway openings 40 ft wide by construction of 18 concrete piers 6 ft wide. Spillway openings were equipped with radial gates, each 19 ft high by 40 ft wide, pivoted to the new piers. The shorter but deeper spillway so constructed permitted building of temporary concrete bulkheads at either end. The east-shore bulkhead adjacent to the powerhouse provides a 188-ft space for construction of the new powerhouse extension. The west-shore bulkhead adjacent to the old Hales Bar lock reserves space for a future 110x600-ft lock.



AFTER rebuilding, the structure had 17 radial gates resting on a lower crest and hinged to new piers built into the old dam.

• **Spillway pier construction**—All spillway crest work was done without lowering the level of the reservoir other than that permissible by day-to-day regulation. For spillway pier construction, four structural steel bulkheads were built at the project, each 14x4 ft and 26 ft high. They were placed against the upstream face of the dam, and timber wings attached to them were made to fit the crest of the dam.

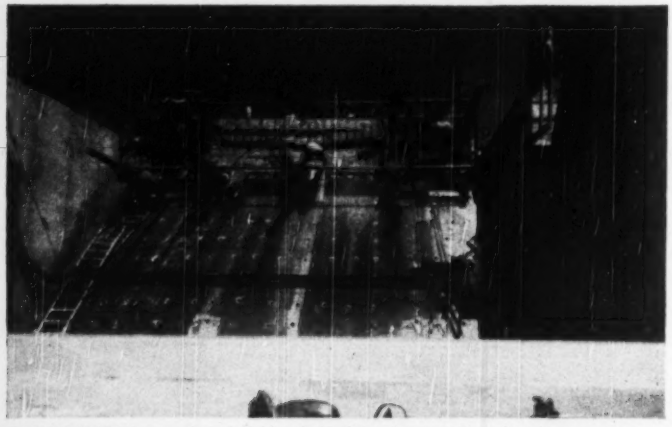
Behind these bulkheads, workers cut slots through the dam 10 ft wide and 18 ft deep (measure from the crest), intersecting the downstream face 33½ ft from the upstream face. Sides of the 10-ft cut were line-drilled and broached to a depth of about 12 in.

Line drilling was done with drifter drills mounted on two job-designed jumbos equipped with adjustable, telescopic legs on the downstream side so that the working platform remained level as the jumbo moved down the face of the dam. The four 6-in. pipe legs of the jumbo were tied together with 3½-in. pipe which supported the working platform. And 3 ft 9 in. above this platform the jumbo's legs were joined with 4-in. solid steel shafts on which the drifter drills were mounted. Three drills were usually operated at a time—one for line drilling on each side of the 10-ft slot and one for drilling blast holes between.

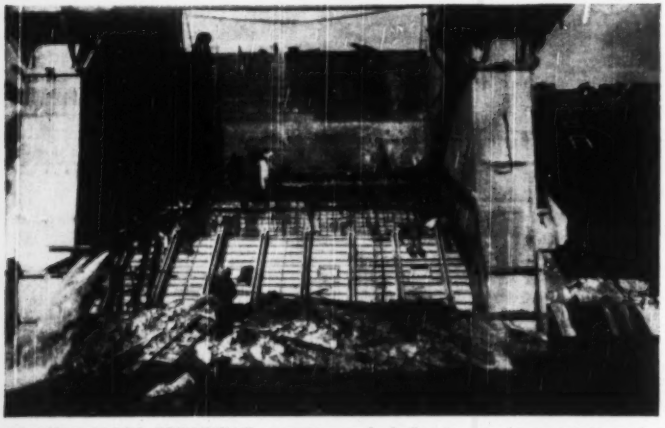
Five blast holes per row were drilled 18 in. on centers, in rows with variable spacing depending upon the burden of concrete to be removed. Outside holes in each row were inclined outward to obtain better breakage at the intersection of the floor and side of the cut. Holes were loaded so the center ones fired first, with delays before intermediate and outside shots. On the upstream half of the dam concrete was removed in 3 to 4-ft lifts. The downstream toe of the cut was removed to the neat lines of the 6-ft concrete piers with pavement breakers.

The new concrete piers were an-

DURING construction a special jumbo rig was devised for line- and blast-hole-drilling for pier and weir excavation on the dam's downstream face.



TWO JUMBOS teamed to drill blast holes for weir excavation after the new concrete piers had been poured left and right.



BEHIND STEEL BULKHEAD spanning newly built piers, workmen set forms for weir pour. Weir section at right is still to be excavated.

chored to the existing dam with 22 dowels 1¼ in. square, spaced over the upstream half of the cut. Concrete for the piers was placed in 5-ft lifts in specially designed steel forms that utilized tieloops in the preceding pour and tie-struts across the top of the form. No internal bracing was needed. Trunnion pin casings were set and guide recesses were formed for the radial gates as concreting progressed. The gate thrust is distributed through the concrete pier by four layers of "hairpin" reinforcement placed around the trunnion pin casings.

Upon completion of each pier to reservoir elevation, temporary 2-ft concrete plugs were used as fillers between the sides of the concrete piers and the side of the cut so that the bulkhead could be moved to the next location. These plugs were removed with the concrete excavated between piers.

• **Spillway weir construction**—Next, the concrete dam between completed piers was cut down some 13 ft at its crest and a 2- to 3-ft thickness of new concrete was formed between the upstream face of the dam and the downstream face of the new piers to provide a curved weir for spillway discharge. This work was done behind 46-ft wide bulkheads spanning the openings between piers. Concrete pedestals integral with the piers at the upstream face had been provided to support these bulkheads. Two bulkheads of the floating type available within TVA and one job-made bulkhead were used for this work.

Blast hole drilling was done in a manner similar to that for the pier excavation, using the two drill jumbos with a connecting arm between to span the 40-ft spillway opening. Excavation was removed with a dragline bucket working from a floating derrick. Concrete was placed in three lifts in curved steel forms faced with an absorptive liner. End bulkhead forms of wood were built in place. The new concrete cap for the weir is doweled to the old concrete with hooked rods about 5 ft on centers each way and is tied to the concrete piers with rods set in the pier concrete and turned into the weir concrete after the weir excavation was completed.

Radial gates—each weighing 40 tons with arms detached—were delivered by barge. Assembled at the project, they were set on the existing concrete crest by two floating derricks. During excavation for the weir, the gates were raised to their highest position; after completion of the weir concrete, they were lowered to the new crest.

The gates are raised and lowered by two traveling gate hoists set on rails on the steel-supported concrete deck spanning the spillway openings.

• **Apron addition**—The spillway apron, as originally built, varied in elevation and in downstream length. Between the limits of the new spillway, the apron was extended as much as 10 ft necessary to provide a minimum of 70-ft width at the base of the dam. It was raised up to 15 ft in some places to secure a uniform elevation.

Rather than enclose the entire apron area with a cofferdam that might leak because of the faulty foundation conditions existing at Hales Bar, TVA forces repaired the apron by placing concrete in a series of blocks 34-ft wide, inside enclosures 40 ft wide. These enclosures were formed by building two structural frames for side arms to extend out from the dam and a 40-ft frame to join these as the downstream side of the enclosure.

A double row of sheet piling was placed around two sides of the enclosure thus framed, and the rows were connected with piling at several intervals to form a series of small cells around the downstream side and low side of the enclosure.

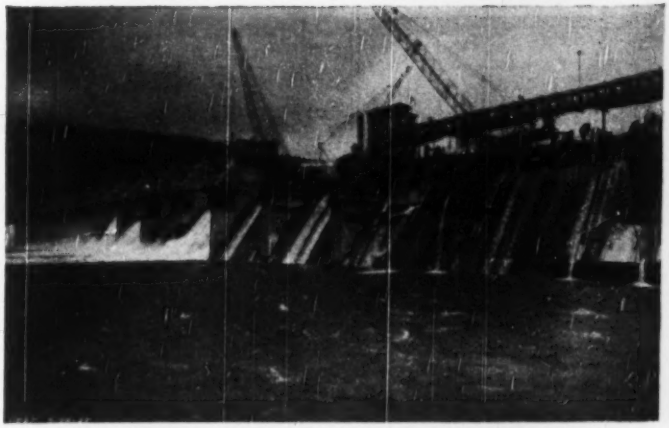
The small cofferdam cells were washed with air and water jets to scour the bottom prior to placement of 3 to 4 ft of tremie concrete for a seal against leakage into the enclosure.

At the east end of the new spillway a training wall (extending 90 ft downstream from the apron) was built in three sections using closure frames similar to those for the concrete apron.

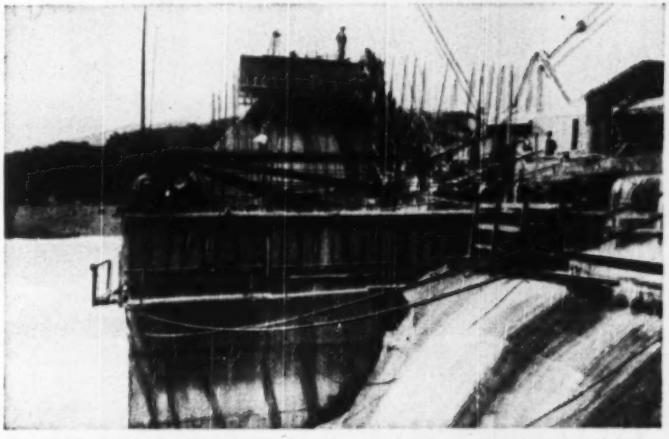
• **Building up bulkhead sections**—Since the bulkhead sections of the dam were needed for spillway discharge regulation during construction, the concrete for the bulkheads was not placed until an equivalent added capacity to the new spillway was completed. Then the concrete dam was cut to the top of the inspection gallery (which was filled with concrete) and the bulkheads 10 ft wide were built up in 5-ft lifts about 30 ft in length behind the floating steel bulkheads. The completion of the bulkheads permitted the Hales Bar pool to be raised to its new level.

Other improvements at Hales Bar included extending the lower lock guard wall, construction of a new upstream land-side guard wall, installation of new lock-filling valves, replacement of valve and gate operating machinery, construction of three mooring cells downstream from the lock and insertion of three floating mooring bitts in the walls of the lock chamber.

Construction at Hales Bar was under the general direction of C. E. Blee, chief engineer. George K. Leonard is chief construction engineer for TVA. At the project H. D. Towers was construction superintendent, and P. L. Guthrie was construction engineer.

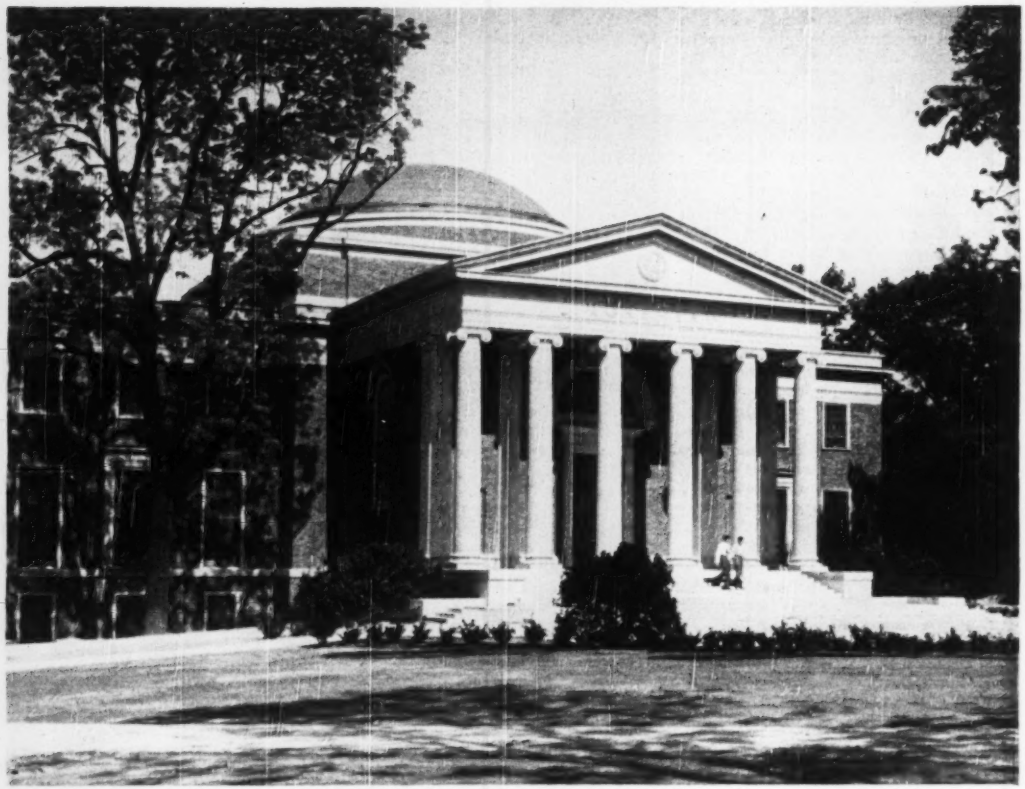


VARIOUS STAGES of pier construction appear in this view from the prepared excavation at extreme right to the completed piers left.



TRUNNION PIN CASINGS for the tainter gates were erected and reinforced before being encased in the next lift of pier concrete to be placed.

APRON ADDITIONS were made in sections inside 40-ft wide cofferdam enclosure. Double row of sheetpiling, joined at intervals, made cofferdam cellular.



Morehead Planetarium

Architects:
Eggers & Higgins, New York
Structural Engineers:
Tuck & Eipel, New York
General Contractor:
J. A. Jones Construction Co., Charlotte, N. C.
Structural Steel Fabricator:
Carolina Steel & Iron Co., Greensboro, N. C.

This new building on the tree-studded campus of the University of North Carolina, at Chapel Hill, is the Morehead Planetarium. Named for its donor, John Motley Morehead, former Minister to Sweden, it is the first planetarium to be built in the South, and the first in the world to be constructed on a college campus. The structure accommodates audiences of several hundred in its circular auditorium. Its stainless steel hemispherical ceiling, above the auditorium, is 68 ft in diameter. The building also contains art galleries, as well as rooms for exhibits in astronomy and allied sciences.

In keeping with the time-honored architectural style at the university, the Morehead Planetarium is faced with mottled brick, with white stone trim. Beneath its rich-looking exterior stands a steel framework of Bethlehem Structural Shapes.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

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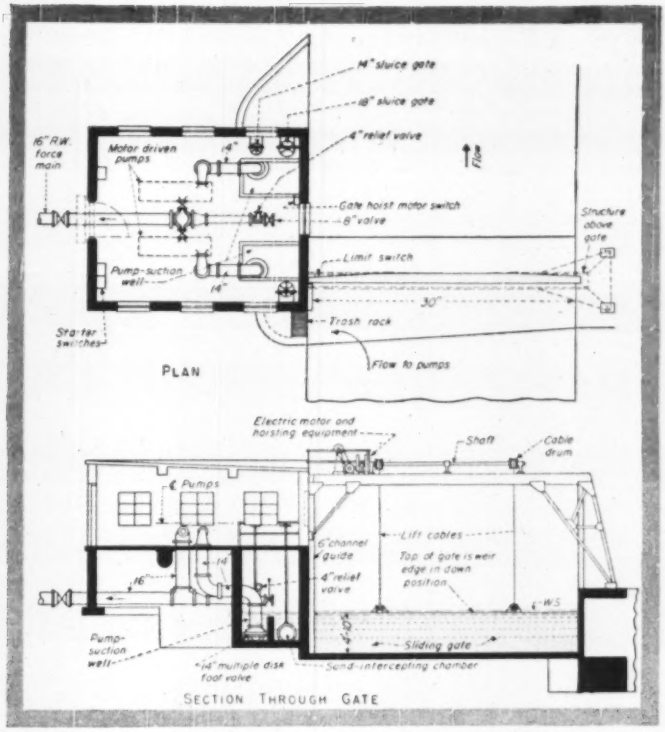


THE THREE-TON GATE is raised by twin cables winding on drums mounted on a single shaft. The direct gear drive is powered by a 7.5-hp reversible electric motor. A limit switch controls maximum height of lift.

Gate protects water pumps from grit damage at intakes

THE TWICE-A-YEAR PROBLEM of replacing glands and sleeves of raw-water pumps has been licked at Mooresville, N. C.

A sliding-gate dam across Byers Creek (the city's source of supply) forms a stilling basin behind which sand in the heavily laden water settles out. Sediment-reduced water then travels through a bar screen, to a secondary sand-intercepting chamber and over a weir into the pump-suction well.

When a considerable amount of sediment has collected behind the barrier, the gate is raised to its maximum height. It is left in this position for a reasonable period to sweep the channel clean.

The gate is then lowered in stages to increase the velocity of discharge beneath it. This results in an increasingly powerful scour that sweeps the stream bed clean, down to its original level.

• **The sliding gate**—Simply a steel barrier—30 ft long and 4 ft 10 in. high and weighing 6,100 lb—the sliding gate is held in place and guided in vertical movement by 6-in. channels at each end. A 6x4-in. timber along the bottom is the jamb against the level concrete floor. This floor, stretching between the pump house and a retaining wall on the opposite side, serves as a sluiceway to contain the stream bed.

The lifting mechanism is on a box girder made up of channels and plates. Also spanning the creek, the girder is carried on the pump house and a tower arrangement above the retaining wall. Bottom of the girder is 20 ft 4 in. above the concrete floor (or sluiceway).

The gate is raised by twin cables on twin drums. The drums are mounted on a single shaft connected through a direct gear-drive to a 7.5-hp electric motor.

The electric motor, which is reversible, is actuated by a switch inside the pump house. It is also fitted with a limit switch for shut off at maximum height.

Speed of lift is 1.14 fpm. The pressure—against which lift must be made just at overflow—is 40,240 lb. When there is two feet of water over the gate, the lift load is calculated at 43,200 lb.

• **Other protection**—The bar screen, at the entrance to the sand-intercepting well, is 3-ft. wide. It is set on a 73.5-deg angle with the horizontal and contains 36 openings at 0.75-in. wide.

Behind the screen, the flow of water turns 90 deg and enters the sand-intercepting well by an 18-in. pipe through the pump-house wall. The Flow control is by an inside valve on the pipe. The stem rises to the operating floor where raise-and-lower is by a hand wheel.

The sand-intercepting chamber, three-feet-wide, runs the length of the pump house. It is separated longitudinally from the pump-suction well by a 2.84-ft high concrete weir. The suction well also has a 14-in. valve at the downstream end for cleanout operations.

Sand collected is flushed out by opening an 18-in. valve inserted at the downstream end of the intercepting well.

• **Pumps**—The two raw-water pumps are driven by electric motors through magnetic starters. The discharge line has a 4-in. relief valve as well as an 8-in. blow-off. Each pump has a capacity of 1,200 gpm against a total dynamic head of 310 ft. With a 12-ft suction lift, each unit is fitted with a multiple-disk foot valve. Total pumping capacity of the station is about 2.5 mgd. This compares to an average runoff in Byers Creek of about 5.0 mgd, according to records over a period of several years.

• **Credits and costs**—The sliding-gate dam and pumping station were designed by Piatt and Davis of Durham, N. C. It was built by Gilbert Engineering Co., general contractor, Statesville, N. C., at a cost of $38,525. The sliding-gate and lift equipment was fabricated by the Southern Engineering Co. of Charlotte. Its cost was about $13,000.

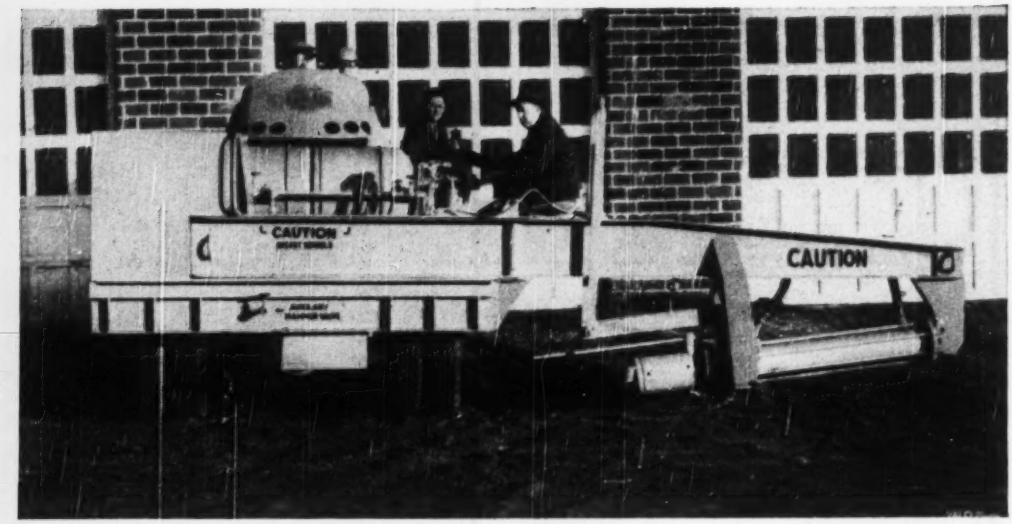


FIG. 1. THE CURB BREAKER is mounted on a specially built chassis so that it will be at right angles to the pavement edge when working but can be swung to the rear of the chassis for travel.

Pavement breaker removes lip curbs

C. L. Gleason
Construction Engineer
Iowa Highway Commission
Ames, Iowa

AN EARLY Iowa highway engineer's plan for preventing erosion of shoulders at the edge of concrete pavements laid on the erodable loess soil in the western part of the state has forced the development of a special machine for use when widening those pavements becomes necessary.

A sloping lip curb was formed along the edge of the pavement at all points where erosion might occur, which was an appreciable part of the 5,600 miles of two-lane concrete pavement laid in those early days.

In 1948, when the highway department was preparing to let contracts for resurfacing and widening 50 miles of that pavement, it found that the work would require removal of 50,000 ft of the curbing. And when bids were taken on that part of the work they ranged from 30 to 60 cents a foot, these being presumably based on hand work.

That high cost led to an inquiry to adjoining states with a similar problem to see whether any more economical methods has been developed; but finding none, the commission's engineers set out to see what could be done to cut the cost of the operation.

About this time the commission acquired a pavement breaker from the Marten-Rosa Tractor Co. of Davenport that had a hammer head weighing 264 lb and which was designed to deliver a 10,000 ft-lb blow, or enough to break through a 10-in. pavement at one blow.

• **Special adaptation**—If this breaker could be mounted so that it operated in a horizontal rather than a vertical position it appeared to have possibilities for solving this problem. So it was mounted on an old truck chassis, and in spite of its makeshift character, it worked well after a special cutter head had been developed to concentrate the blow at the right point to shear the curb from its anchorage on the pavement slab.

The machine was used during the 1948 season and the costs were 5.58 cents per linear foot of curb removed, including picking up the shattered curb, removing it and filling the trench. One trouble with the makeshift machine was that it operated off the pavement which made operating along a straight line extremely difficult.

As a result of this experience the highway department built a new machine that could operate from the pavement with the breaking equipment carried on an arm extending over the pavement shoulder, as shown in the accompanying photo.

The new machine actually consists of a 315 cu ft compressor mounted on a special chassis. A counterweight of 3,200 lb is used to balance the overhang of the cylinder assembly when it is in working position. The chassis of the 15-ton machine is self-propelled by an air motor running through two truck transmissions; brakes are a combination of air and hydraulic.

In operating this equipment it was found that the best results were obtained when it moved ahead about one foot at a time. It will remove about 1,200 ft of curb an hour.

This rate, however, requires a good deal of concentration on the part of the operator, since a whole series of operations are required of him at the rate of 15 to 20 times per minute. Because of this need for concentration, operators rest about every 30 minutes, while a spare operator takes over.

A motor grader opens a trench about the width of the proposed addition to the pavement ahead of the curb breaker to expose the edge of the slab. Behind the breaker, two or three workmen pick up the broken curb by hand, loading it into a truck. This was found to be faster than doing it with a front-end loader.

Tolerances set up in the specifications ranged from one half inch to one inch depending on the type of resurfacing. The machine did not leave many high spots above the one-inch limit that had to be removed with hand-operated air hammers, but the

half-inch limit was more difficult to meet. At present the commission's staff is experimenting with a power grinder to eliminate that hand work also. It is shown in Fig. 3, idle and in operation.

This machine is made up of four "G Revo" cutting tools manufactured by the G. H. Tennant Co. of Minneapolis, Minn. Each cutter is 4 in. wide, and on the grinder each is offset to make a 14-in. cut covering the entire 12-in. width of the curb base. V-belts, powered by a V-8 automobile engine, drive these cutter heads at 2,000 rpm. The whole assembly is mounted so that it can be drawn by a tractor having variable speeds so that the rate of advance can be adjusted to the amount of cutting to be done by the crew.

In the current operations the curb breaker is used to "rough in" the curb removal and finish to the half-inch tolerance with an air-powered pavement breaker.

It is planned to build another machine with a single head 16 in. wide. Both the cutter head and the engine that drives it will be suspended from the tractor frame of the newly planned machine.

• **Only widening needed**—In Iowa there are hundreds of miles of 18-ft wide concrete pavement where it will be unnecessary to resurface as the pavement is in good condition. But these roads are too narrow for the present traffic. If this machine can be developed to do a satisfactory job, the highway department expects to finish the pavement where the curb is removed and widen with concrete so that it will be unnecessary to resurface for several years or until the pavement has deteriorated to such an extent that it is necessary to recap either with asphaltic concrete or portland-cement concrete, as conditions warrant.

In 1949, with the curb breaker, three times as much curb was removed as in 1948, at an average cost of 5.96 cents per foot. The lowest cost was 4.7 cents, but this was offset by high costs on a section with several bridges, at which much hand work was needed, and by the closer tolerance to be met on a section to be resurfaced with concrete.

These costs included all direct labor costs, equipment operating costs, equipment rental and depreciation and tools and supplies. Contractors, of course, have to add overhead, taxes and insurance.

The State Highway Commission undertook this work to show that the curbs can be removed by mechanical means at very considerable savings to the state.

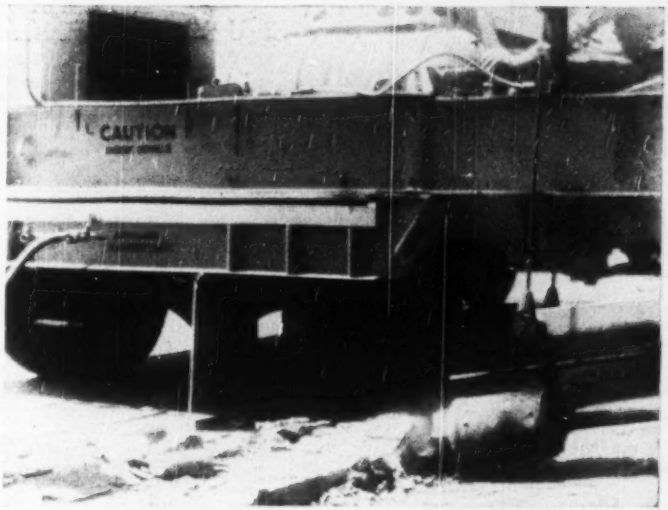


FIG. 2. THE HAMMERHEAD of the breaker strikes the slab edge at a point where the curb will shear off close to level of the pavement surface.

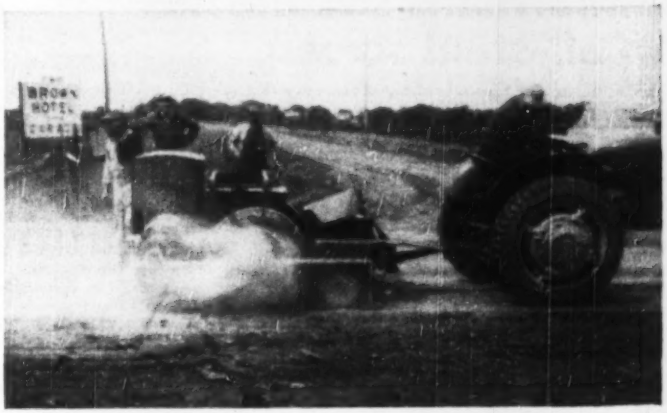
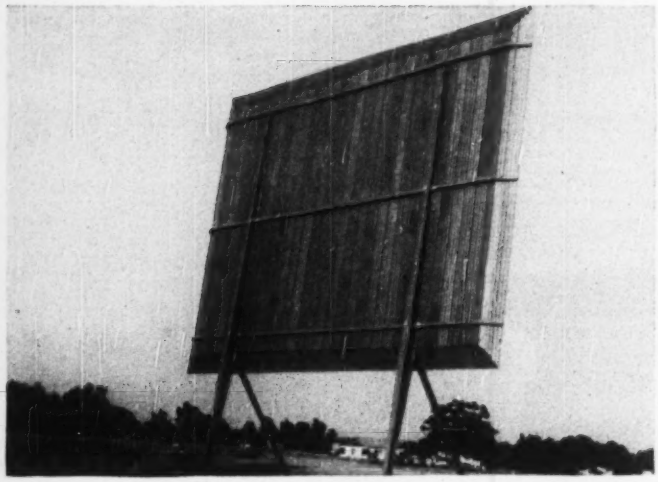
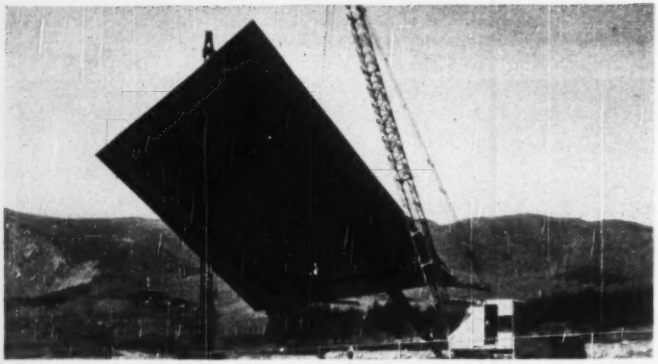


FIG. 3. GRINDING DOWN the rough base of the curb is now being done with four cutter heads so mounted as to cover a width of 14 in.





ERECTION IS SIMPLE—Steel units were assembled at the site on the scaffolding seen at the left. Two heavy duty truck cranes then hoisted the assembly to its near-vertical position.

Californians see movies on all-steel screen

Edwin A. Verner
Structural Engineer
San Francisco

SIMPLICITY is the keynote in design of all-steel, drive-in movie screens constructed in California recently. They are characterized by good architectural appearance and by low erection and material costs.

Each screen consists of two vertical supporting spires, on which is hung a steel diaphragm that both supports and is supported by three horizontal beams. The diaphragm is an assembly of steel panels of the type usually used in building floors (in this case it is H. H. Robertson Co. UK 18-18 Q flooring).

Strength of the steel panels is one key to design simplicity: Wider spacing of supporting elements is possible. The steel panels, when properly attached, require no diagonal bracing and can be used with an unsupported 6-ft overhang both top and bottom.

The screens can be built in various sizes according to need. The 66x50-ft screen seems to be most popular for average-size drive-ins.

• **Wind load governs**—Except for the dead load, the only force acting that need be considered is wind load. The author has used a loading of 15 lb per sq ft up to 60 ft above ground level and 20 lb per sq ft above that, as provided in the Uniform Building Code of the Pacific Coast Building Officials Conference.

Most important load-resisting elements are the two vertical spires. Stress in these is almost entirely bending, the maximum being at the junction of the main member with the diagonal supporting member. Below this joint some shear is also important.

Each vertical frame consists of a long, heavy member braced at the bottom of the screen by a lighter rolled section (8-in. wide flange). The long member leans slightly toward the audience for direct view. All four legs supporting the screen are pin-connected (1¾-in. dia pin) to concrete footings for positive stress calculation and easier erection. The main spire base is a double-pin connection designed to resist the bending induced in that joint by slicing winds.

The vertical spires are designed with no excess materials. They are made entirely of welded plates varying from ¾ to ⅝ in. in thickness. Both web and flange of this made-up member are tapered to minimize materials used. (Most fabricating shops are equipped with automatic continuous electric welding machines that make effective joints.)

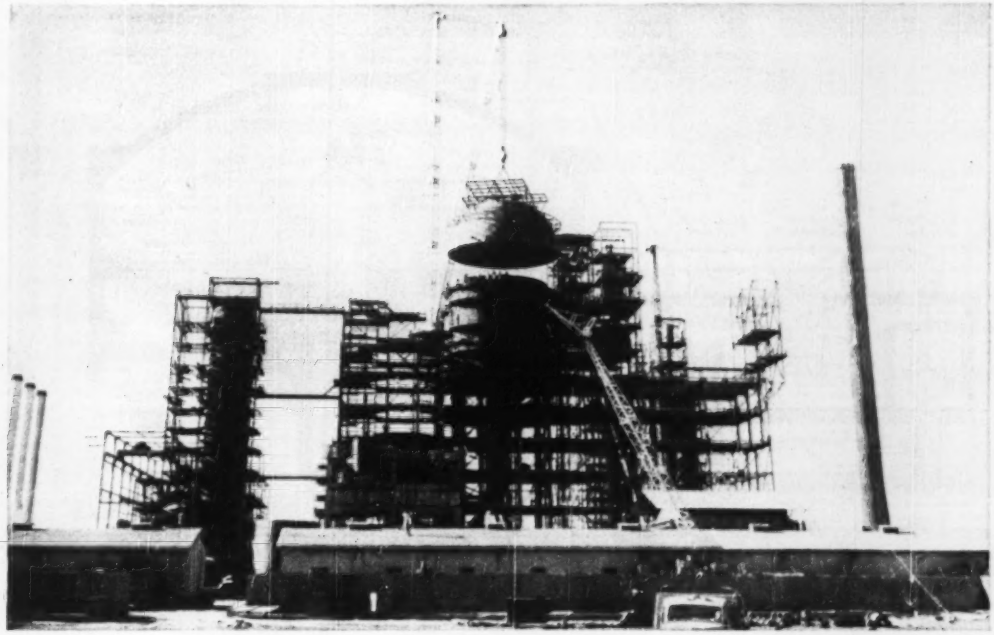
The vertical members are spaced 38¼ ft apart, supporting three horizontal beams (8-in. wide flange) spaced 19 ft apart. The horizontal beams are framed across the vertical members to make them continuous. This is a further effort to reduce size. With only two vertical members, there are but six joints to frame. A weaker diaphragm material would require more vertical members and result in more costly fabrication.

The steel floor panels are carefully crimped together and are welded to the steel supporting members, welds being ¼ in. long at 6-in. centers.

For architectural effect some of the screens are dished—that is, a 3-ft strip around the perimeter of the screen is constructed at a 22½-deg angle to the plane of the screen. This results in more pleasing appearance and there are no particular complications in the structural design.

Erection is simple. They are usually built in the horizontal position on ground. Since the legs are pin-supported it's a relatively simple trick to hinge the assembly around a pair of these pins.

The theaters using these screens were designed by Bernard G. Nobler, architect, who assisted in proportioning the towers. The author developed the all-steel design of the screen structure.



Yanks win big Iran "bowl game" with American Derrick!

This was a big moment, here at Abadan, in the Persian Gulf. That big steel bowl is 47 feet across . . . weighs 100 tons. And it had to be set with the same nice precision as putting an egg in an egg cup.

Foster-Wheeler Corporation, the American contractors building this 30,000 bbl. cat-cracker as part of the Abadan plant—world's largest refinery—chose a 150-ton American Guy Derrick for the job.

The "bowl" is actually a cone. It was first fabricated on the ground, upside down. The derrick, with mast top 208 feet above the ground, then turned the cone right side up, raised it and set it in place. In all, more than 5000 tons of structural steel and vessels are being erected for this regenerator—one of six such units in the plant.

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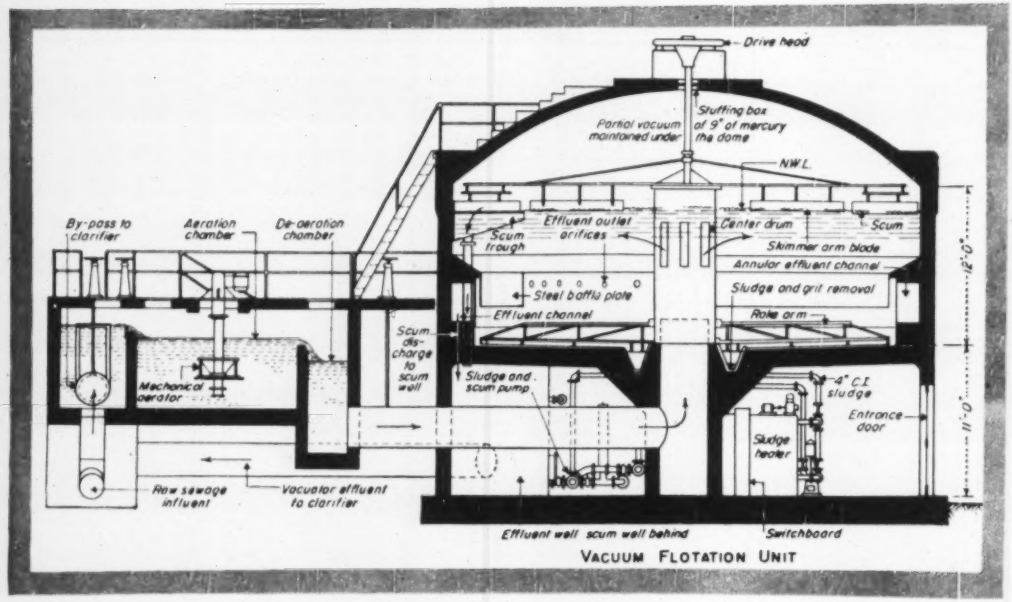


VACUUM FLOTATION of liquid wastes consists of mechanical aeration, de-aeration for removing the largest gas bubbles, and application of a partial vacuum in an inclosed tank. This lifts solids and scum to the surface where they are skimmed off.

Vacuum flotation—A sewage works tool

Harry N. Jenks
Consulting Sanitary Engineer
Palo Alto, Calif.

VACUUM FLOTATION—for treatment of sewage and industrial wastes—has come of age. It's now being applied successfully to the progressive design of up-to-date sewage works. (ENR Feb. 25, 1943, p. 57).

• **What it is**—Vacuum flotation involves the removal of suspended solids from liquid wastes, largely as a float or scum on the surface. This is done under a partial vacuum. The vacuum encourages release of entrained air and other gaseous bubbles introduced artificially or present in the wastes at atmospheric pressure.

The phenomenon—of air entrainment and release under reduced pressure—finds its counterpart in the "white water" observed at times in tap water. When tap water, containing an abundance of dissolved oxygen, is suddenly drawn into a glass, bubbles rise to the surface.

Such bubbles, in the presence of suspended matter, adhere to the particles and buoy them upwards to the surface. This is exactly what happens in a vacuum-flotation unit, except that the processes are artificially speeded up and floating materials are skimmed off into a scum trough, as is done in a conventional open clarifier.

The flotation tank, in effect, functions as an upside-down clarifier. The bulk of the solids is removed from the liquid surface and a minor amount of sludge is collected and drawn off from the bottom of the unit's vacuum tank. Grit is also intercepted with the sludge, thus protecting subsequent pumps and settling devices.

The vacuum-flotation unit is made up of an aeration chamber, a de-aeration compartment and an inclosed flotation tank (see headpiece). The latter has a dome roof. It is designed structurally to withstand unbalanced pressures resulting from the application of a partial vacuum (up to 12 in. of mercury) under it.

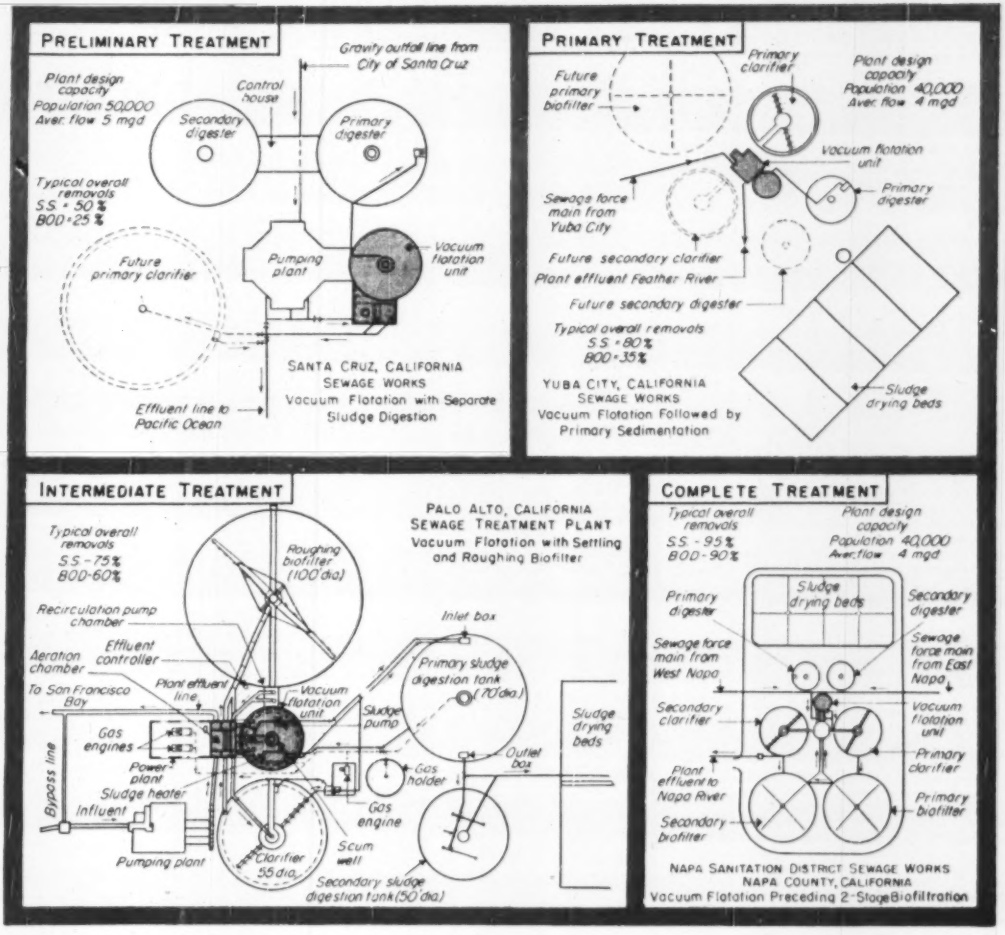
• **Initial steps**—Raw sewage (or industrial waste) is normally aerated without prior treatment such as screening. This is done by a mechanical aerator. It has been found that air entrainment (active)—rather than air diffusion (passive)—into the waste liquid is more effective.

The aerated sewage then flows over a weir plate into the de-aeration compartment. Here the large and excess air bubbles rise and escape to the atmosphere. This relieves the vacuum-pumping equipment from handling more than the relatively small amount of gases that must be exhausted from the vacuum tank.

• **Advantages**—The outstanding feature of the vacuum-flotation unit is its compactness in relation to its flow-capacity. Other advantages are: Low overall loss of head—from influent to effluent weir of 1.5 to 2.5 ft; short detention periods in the aerator (1 to 2 min); and limited holding times in the vacuum tank. The holding time is usually about 20 min, which is associated with overflow rates ranging from 4,000 to 10,000 gpd per sq ft of horizontally projected tank area.

Vacuum processing—conservatively rated—can be effectively applied to an average flow of 5 mgd with a flotation unit 35 ft in dia and 10.25 ft sidewall depth. This unit would be preceded by an aeration chamber about 12 x 12 ft in plan and 5 ft deep.

Based on experience gained in operating a number of full scale "vacuum" units, it appears that the



USED IN FOUR CASES—in four classes of treatment—the range and individual gradations of sewage treatment can be extended.

flotation process may be relied upon to accomplish one or both of the following objectives at minimum construction and operating cost:

(1) Remove scum-forming constituents otherwise not amenable to plain sedimentation; and

(2) Remove scum- and sludge-forming constituents utilizing subsequent short-period plain sedimentation to a greater degree than plain sedimentation alone.

• **Fit it into the process**—Viewing design of sewage works as a whole, vacuum flotation may be incorporated into flow sheets in several ways. Four general and useful combinations are (flowsheets):

(1) Vacuum flotation only, coupled with separate sludge digestion.

(2) Vacuum flotation followed by plain sedimentation together with separate sludge digestion.

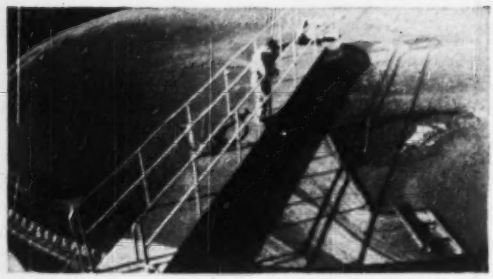
(3) Vacuum flotation in combination with a roughing biofilter and plain sedimentation, the sludge being handled by separate digestion.

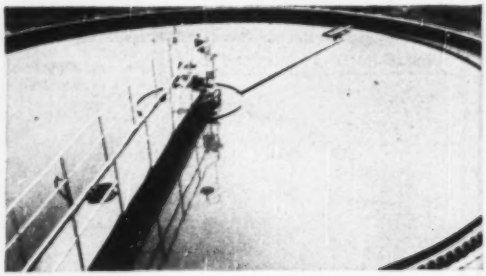
(4) Vacuum flotation preceding two-stage biofiltration or other complete-treatment process. This is also followed by separate sludge digestion.

This sequence of possible applications corresponds to treatment plants designed to effect a progressively higher degree of purification—measured by suspended-solids and biochemical-oxygen-demand removals.

If vacuum flotation alone is the basic form of treatment, the degree of purification is somewhat less than that given by so-called primary treatment. This type of plant is particularly applicable where effluent goes into a relatively large body of water. Criteria for such treatment are principally elimination of floating solids and sludge deposits. These conditions may hold along the sea coast or on coastal bays.

In contrast to disposal conditions that permit the economy and simplicity of preliminary treatment, a situation often exists where a somewhat higher degree of purification is required than that given by primary sedimentation. But usually the added expense of complete treatment is not justified. Intermediate treatment—vacuum flotation, roughing biofilter and final setting—usually will afford the necessary flexibility of operation and bring about construction and





CONTRAST—Before: Industrial wastes cause heavy scum on the primary clarifier. After: Prior scum removal by vacuum flotation keeps the surface of the primary clarifier mirror clean.

operating economies. This processing is particularly effective in handling sewage flows that contain industrial wastes.

• **Some California examples**—Vacuum flotation with separate sludge-digestion (preliminary treatment) is being practiced at Santa Cruz (flowsheets). Exacting odor-control requirements are met at this plant because the sewage is exposed to the atmosphere only in the areation and effluent chambers. Effluent is discharged directly into the Pacific Ocean. Provision has been made, however, for the installation of a clarifier to provide primary treatment in the future.

The Yuba City sewageworks is based on vacuum flotation, primary sedimentation and separate sludge digestion. The plant is designed for enlargement in respect to flow as well as degree of treatment. The ultimate plan calls for intermediate treatment of sewage and canning wastes by single-stage biofiltration with dual recirculation.

Intermediate treatment is employed at Palo Alto to handle domestic sewage as well as canning wastes. The piping layout (flowsheet) makes possible a high degree of flexibility in operation. Processing at present is vacuum flotation in the role of a primary clarifier, biofiltration with recirculation between the final clarifier and the filter. (SEWAGE WORKS JOURNAL Sept. 1949, p. 779).

Complete treatment is given at the Napa Sanitation District Works. Two-stage biofiltration and separate sludge digestion is preceded by vacuum flotation to intercept shock loads of industrial wastes. The sewage contains domestic wastes from the Napa State Hospital as well as large amounts of laundry wastes.

Vacuum flotation operating experience is impressive in the substantially complete separation and removal of scum, grease, oil and related floating solids. The results verge on the spectacular in the treatment of cannery wastes not amenable to plain sedimentation processes (see photos).

• **What it can do**—The vacuum-flotation process of sewage treatment—in connection with the installations discussed—removes in itself 40 to 50% of the suspended solids in raw wastes. The BOD removal is about 20 to 25%. It is associated with de-sludging.

At all plants where sedimentation follows vacuum flotation, it has been observed that combined scum and sludge removed by flotation usually somewhat exceeds the sludge removed by subsequent clarifiers. The percentage of solids contained in the flotation scum is greater than in clarifier sludge.

The satisfactory results of vacuum flotation—in terms of both economy and effectiveness—appear to warrant the conclusion that it has become established as a notably useful process for sewage treatment. This conclusion is drawn from the performance of installations now in service.

• **Owner**—The vacuum-flotation unit utilized in all the plants described is a Vacuator. The Vacuator (a registered Dorr Co. trademark) and its auxiliary equipment were developed and furnished by the Dorr Company, Inc., New York and Los Angeles.

The Vacuator installations and sewage plants described were designed by me as consulting engineer to the respective cities and sanitation districts where the projects were built.

Aluminum span OK after four years

After four years of service, the aluminum span on the Massena Terminal Railroad Co.'s single-track crossing over the Grasse River is continuing to perform satisfactorily.

Built near Massena, N. Y., in the fall of 1946, the bridge consists of six deck plate-girder spans of steel and one of aluminum (ENR Nov 28, 1946, vol p 714). It was designed for Cooper E 60 loading.

The aluminum span consists of two 97½-ft long girders made of 14S-T6 alloy, 121¾ in. deep, weighing 53,000 lb. The adjacent 98-ft steel span is 110 in. deep and weighs 128,000 lb.

The excellent performance of the bridge was predicted by tests made in Sept. 1947, one year after the bridge was placed in operation ("Tests of Aluminum and Steel Railway Bridge Girders," by E. C. Hartman, R. L. Moore and F. E. Rebhun Bulletin 484, American Railway Engineering Assn., Dec., 1949). These tests indicated that:

1. Under static load, aluminum and steel girders behaved alike, as shown by the primary bending stresses measured. These stresses were generally slightly less than those computed, suggesting that the lateral bracing participated in resisting bending.

2. Vertical deflections of aluminum and steel girders were slightly less than the computed values under static loads.

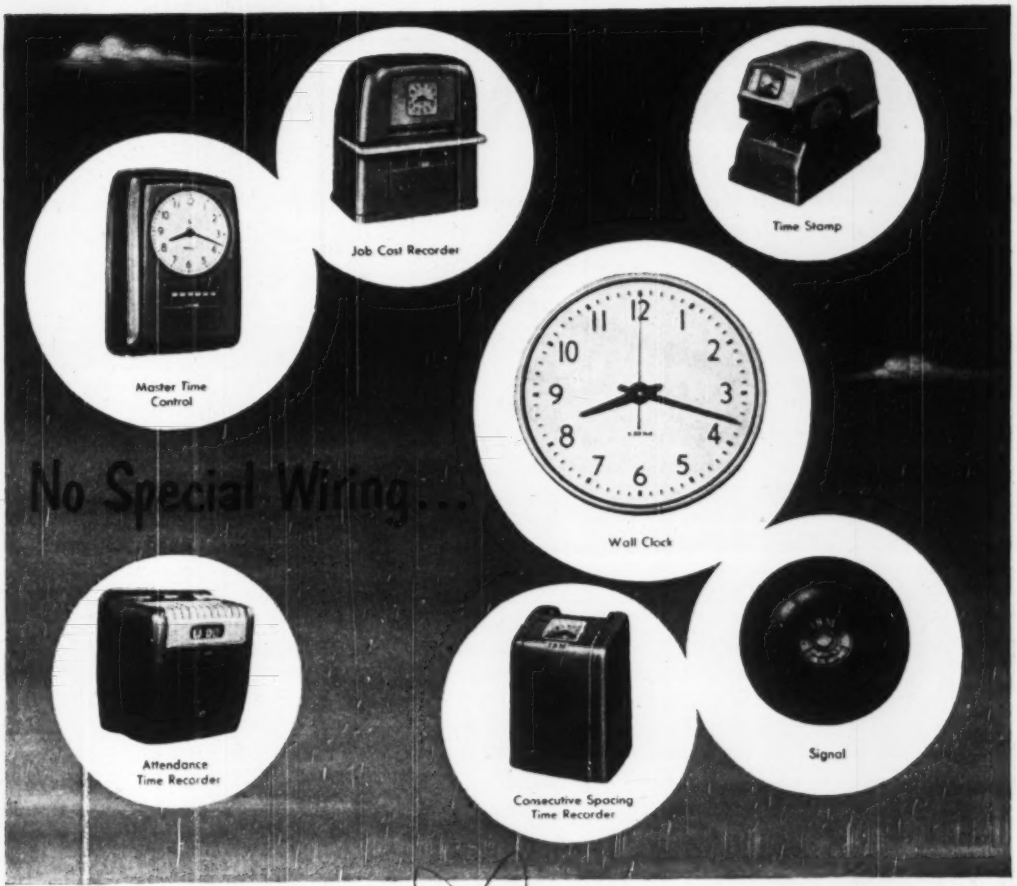
3. The magnitude of transverse strains in the fillets of the inside top flanges of the girders under static wheel-load concentrations did not appear to be significant.

4. Primary tensile stresses and vertical deflections under loads moving at 28 to 34 mph were only 12 to 15% higher than the corresponding static values. No tendencies toward resonance under the hammer blows of the unbalanced locomotive drivers were observed.

5. Natural frequencies of vibration for the unloaded aluminum spans were higher than computed.

6. When loaded with a 100-ton diesel locomotive, only the aluminum span had a well defined natural frequency. This frequency corresponded closely to that computed for the loaded span neglecting the spring action of the locomotive.

7. The aluminum span showed superior damping characteristics.



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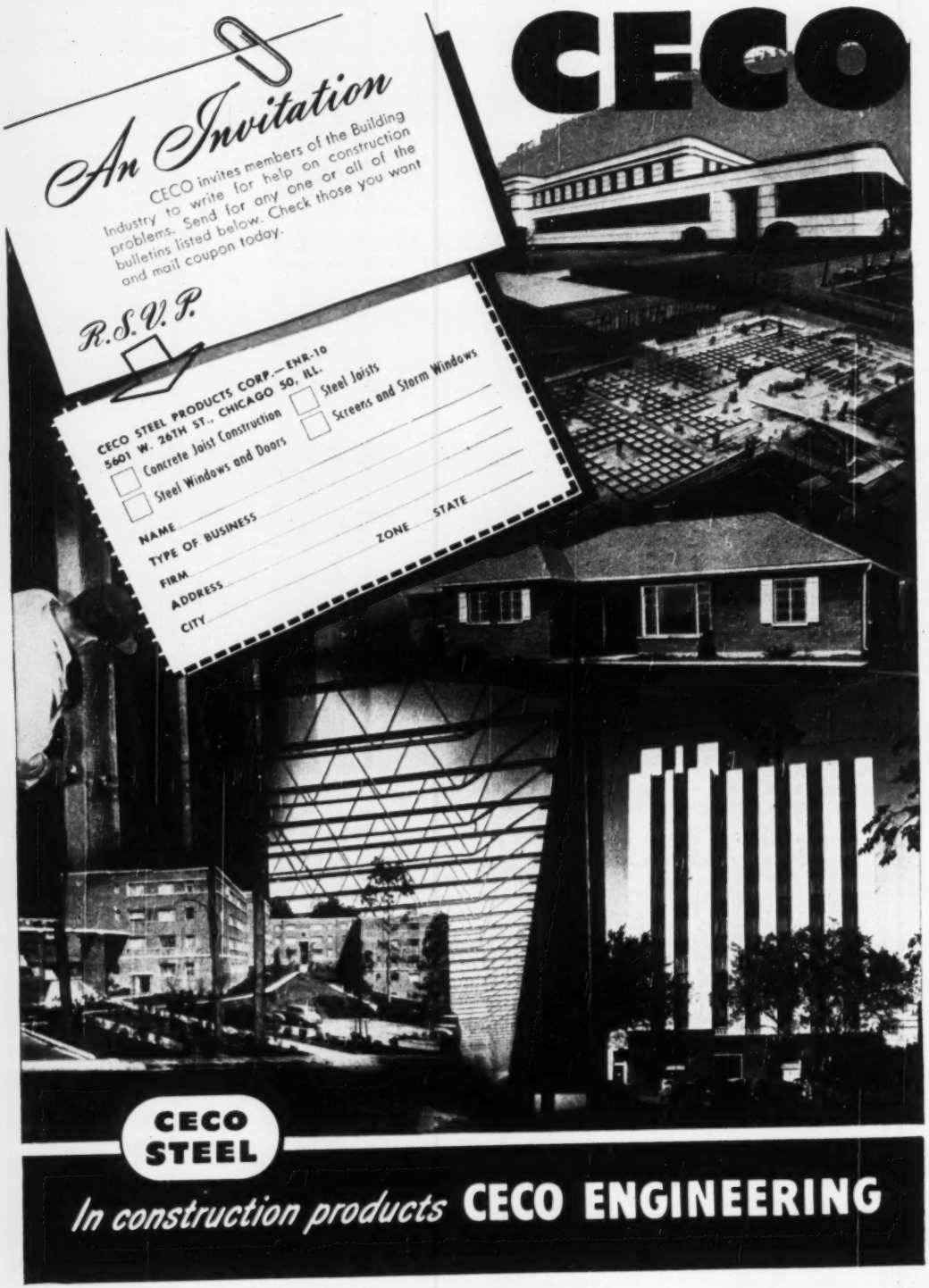
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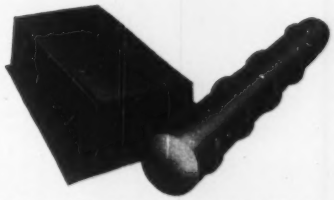

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READER COMMENT

Boston wrongly accused

Sir: Boston is not without its sins, nor apparently is it without being sinned against.

In your editorial (ENR, Sept. 21, p. 21) "Politics Pays Boston Badly," you place the responsibility for what you present as political skullduggery, not directly where it belongs. The emphasis you place on Boston indicates to readers that it is with our city government that blame should be placed for the ill condition you publicize.

Just to keep the record clear the Metropolitan District Commission is a body of the Commonwealth. Its offices are located in Boston, and while in measure Boston, being a part of the state (as are other nearby cities), is involved, the Commission itself is not a part of our municipal framework.

Boston, under the leadership of a very competent, highly intelligent and thoroughly honest Mayor, John B. Hynes, surrounded by capable department heads, is in the throes of straightening out what is basically a fine city.

ROBERT J. JONES
Ass't. Sec'y.
Office of the Mayor
City of Boston

Our apologies to the city administration in Boston for assigning the Metropolitan District Commission to its jurisdiction.—EDITOR.

Plastic-faced plywood

Sir: We have all read the article on plastic-faced plywood forms appearing in the July 20 issue of ENGINEERING NEWS-RECORD (p. 36).

One statement hit several of us as quite a surprise and accordingly, I am writing to see whether we could get a check on the accuracy of the particular statement. It reads, "In a test, exterior grade lasted only four uses."

Ordinarily, we expect exterior type plywood to last until the surface is literally worn away or until the panels have been so cut up by different uses that they are no longer of value.

Our industry also makes the Plyform grade which is especially designed for concrete form work but is an interior type rather than an exterior type of panel. The interior type is made with a water-resistant glue. (Exterior is made with waterproof glue).

Unfortunately, quite a few people confuse the Plyform grade with exterior. When the article states that exterior plywood lasted only four uses, we wonder whether some confusion of these two grades might have been responsible.

N. S. PERKINS
Technical Director
Douglas Fir Plywood Association
Tacoma, Wash.

EDITOR'S NOTE: The article's source affirms that the plywood in question was exterior grade. It was used on architectural concrete surfaces, where it was necessary to maintain a clear even surface with a minimum of rubbing. However, the exterior grade plywood still was usable in less critical areas, after four uses on architectural-concrete areas.

Concrete for prestressing

Sir: I read with interest the article on the Walnut Lane prestressed concrete bridge in ENGINEERING NEWS-RECORD of Sept. 21, p. 32. The statement regarding the concrete is of special interest, inasmuch as the Warner Company supplied all the concrete for the structure—not only the prestressed floor, but also foundations and piers.

The mix, as you state, consists of 8½ sacks of portland cement per cu yd. The actual quantities involved to give a cubic yard (plus about 2%) are as follows: Cement, 799 lb; sand, 1,010 lb; 1-in. graded gravel, 2,020 lb. There is also added ¾ lb of an admixture per sack of cement. The coarse aggregate is from the glacial moraine deposit in the vicinity of Morrisville, Pa. It is known commercially in Philadelphia as ¾-in. and passes 1-in. AST'M and federal specifications.

The length of haul, in time, from the central-mixing plant where the ingredients for the concrete are weighed under professoinal engineering supervision and the concrete is mixed, is about 40 minutes.

Extensive slump tests were made by Warner Company's concrete engineer, Harry F. Irwin, on practically every day that the prestressed concrete girders were poured. There has been a gradual increase in slump (with increased experience of the operators on the job) to an average of approximately 3¼-in. slump at the site of the work.

ALEXANDER FOSTER, JR.
Vice-president, Warner Co.
Philadelphia, Pa.

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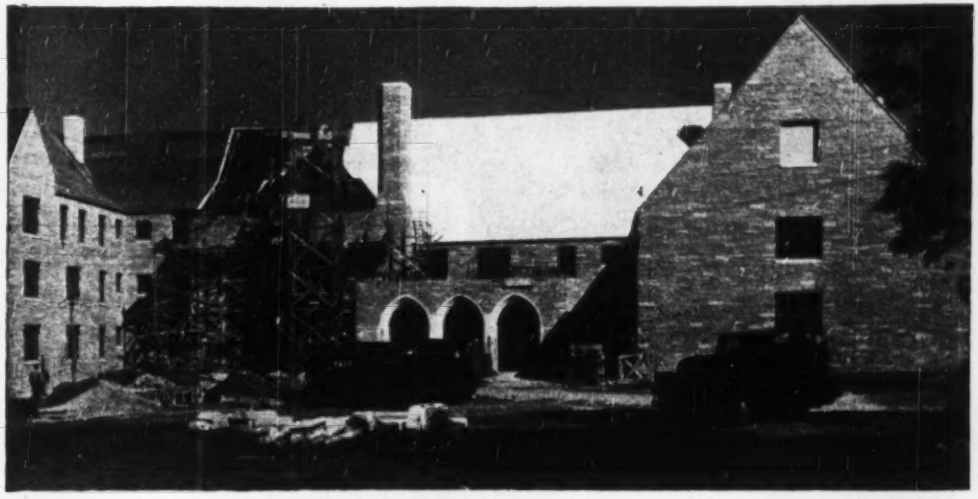

Photograph shows application of Kaylo Roof Tile to a new dormitory of the University of Tulsa, Tulsa, Oklahoma. Architect—Atkinson & Murray. Contractor—Al Ward Construction Co.

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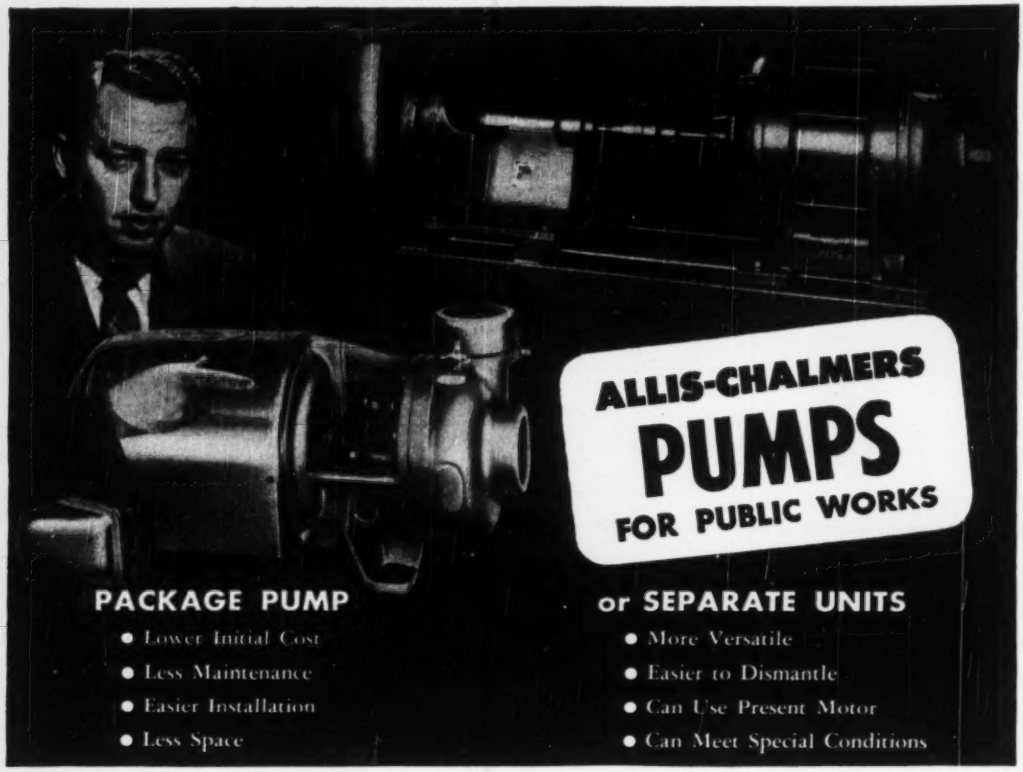

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FIELD AND OFFICE

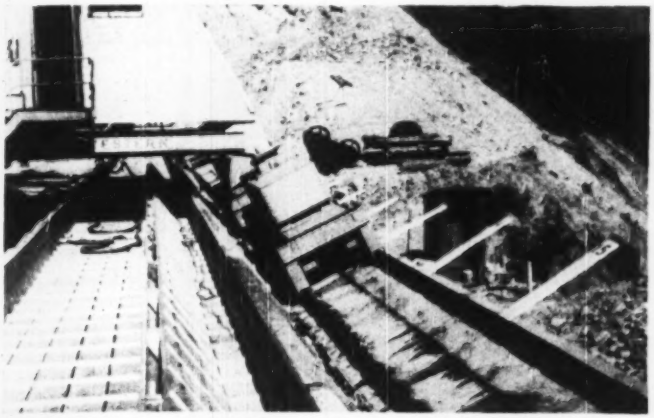
Marble Applied as Veneer Speeds Department-Store Facing

Using a unique method of installation, the exterior marble work on the $8,000,000 Sakowitz Bros. store was completed in record-breaking time. In this Houston, Texas, building the marble is ¾ in. thick, instead of the 4-in.-thick blocks generally used. Thus the marble is applied somewhat in the manner of a veneer, and, due to the method of application, it becomes fused to the rest of the wall as a permanent part of the structure, not merely as a surfacing.

First the marble-setters anchor each slab to the masonry by 9 copper anchors fastened to the marble. These pieces of copper are pressed into holes which have been whittled into the masonry and then filled with wet cement. A ¾-in. space is left between the marble and the masonry. This is filled with a special, white, stainless cement said to infuse itself a distance into both the masonry and the marble. By this infusion, or permeation, the marble, cement, and masonry become a permanent unit, and the marble cannot loosen. As the marble is installed, the joints are filled with an elastic cement which allows the marble to expand and contract with the temperature, yet still provide a tight, perfect-fitting joint.

This method of installing marble has another feature particularly advantageous in this part of the country. It makes a watertight wall, impervious not only to rain, but to dampness as well.

The marble selected is Imperial Danby, obtained from underground quarries at Danby, Vt. There are 11 carloads, or 2,530 slabs of marble, each 4-ft square, surfacing the new Sakowitz building. Each slab weighs 200 lb. This means there is 504,000 lb., or 252 tons, of marble on the exterior, not including the curved and ornamental sections, or the Italian marble footing the windows. Each of these 2,520 slabs is matched for color and pattern at the quarry, and is delivered with instructions as to its individual position on the building. Marble was installed by the Vermont Marble Co. Tellepsen & Son is the general contractor. Architect Alfred Finn designed the building. Robert Cummins is the engineer.



KEEPING CABLES CLEAR—Wooden troughs running the length of the head tower track at Detroit Dam keep electric cables from fouling during operations. Numbered boards (right) indicate position of head tower to operator. This headtower equipment was devised by engineers for Consolidated Builders, Inc., contractor on the construction of this $28,000,000 Corps of Engineers project in Oregon.

to hold back water ...

The Conemaugh Dam near Pittsburgh is part of the Ohio River Basin flood control program. Darex AEA is used in the 1,090 ft. concrete structure to improve workability, increase resistance to freezing and thawing.

Earth retaining wall of Darex AEA concrete cribbing at Concord, New Hampshire. Darex AEA increases the durability of precast concrete products 400 to 500% when exposed to weathering, frost or sea water action.

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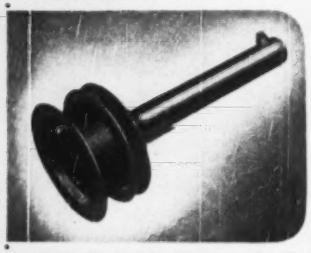

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Reports and Pamphlets

WHO PAYS FOR STREET AND UTILITY INSTALLATIONS IN NEW RESIDENTAL AREAS? A Survey of Municipal Policy—Technical Bulletin No. 13. Urban Land Institute, 137 K St., N.W., Washington 6, D. C., $2.00.

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CLAY BUILDING BRICKS OF THE UNITED KINGDOM—Paper No. 5. National Brick Advisory Council, The Ministry of Works, London. Price 7s. 6d. net.

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NATIONAL AIRPORT PLAN: 1950—General and Summary Information Concerning the National Airport Plan and the Federal-Aid Airport Program. Supt. of Documents, U. S. Government Printing Office, Washington 25, D. C. Price 75c.

FIRE RESISTANCE OF WALLS OF LIGHTWEIGHT-AGGREGATE CONCRETE MASONRY UNITS—Building Materials and Structures Report BMS117. Supt. of Documents, U. S. Government Printing Office, Washington 25, D. C. Price 20c.

STATISTICAL SUMMARY OF SEWAGE WORKS IN THE UNITED STATES (SUPPLEMENT 213)—By John R. Thoman. Based on 1945 Inventory of Water and Sewage Facilities in the United States. Superintendent of Documents, Washington 25, D. C. Price 10c.

THE PLANNING AND DESIGN OF AIRPORTS—By Robert Horonjeff and John Hugh Jones. 64 pp. University of California Press. Available from Associated Students Store, University of California, Berkeley 4, Calif. $1.50.

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GUIDE TO SOURCE MATERIAL ON WATER POLLUTION CONTROL—Division of Water Pollution Control, Public Health Service, Washington 25, D. C.

ECONOMIC EFFECTS OF THE CHESAPEAKE BAY BRIDGE ON THE EASTERN SHORE—Maryland State Planning Commission, Equitable Bldg., Baltimore 2, Md.

DOWNHILL SPEEDS OF TRUCKS ON MOUNTAIN GRADES—Prepared by the Division of Economics and Statistics, Arizona Highway Department, Phoenix, Ariz., in cooperation with tahe Bureau of Public Roads.

SPEAKING CAN BE EASY . . . FOR ENGINEERS, TOO—Engineers' Council for Professional Development, 29 W. 39th St., New York 18. Price 50c.

SNOW FENCES—Road Research Technical Paper No. 19. Road Research Laboratory, Harmondsworth, West Drayton, Middlesex, England. Price 1s 9d.

THE TWENTY-THIRD ANNUAL HIGHWAY CONFERENCE OF THE UNIVERSITY OF COLORADO—Highway Series, No. 23. The University of Colorado, Boulder, Colo.

METHODS OF EXCAVATION AND ROOF SUPPORT USED IN SOME RECENTLY CONSTRUCTED TUNNELS—Information Circular 7568. Bureau of Mines, 4800 Forbes St., Pittsburgh 13, Pa.

RECOMMENDED PRACTICE OF DAYLIGHTING—Prepared by the Committee on Daylighting of the Illuminating Engineering Society, 51 Madison Ave., New York 10. Price 50c.

HYDRAULIC RESEARCH IN THE UNITED STATES—National Bureau of Standards, Washington, D. C.

POWER PLANT COMMUNICATION SYSTEMS—Gai-Tronics Corp., Reading, Pa.

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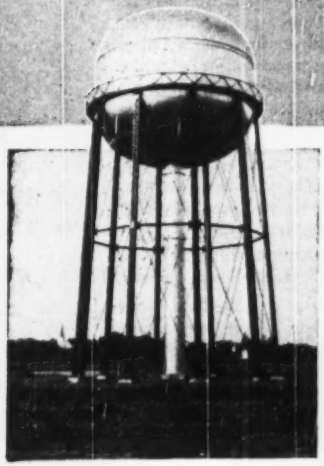

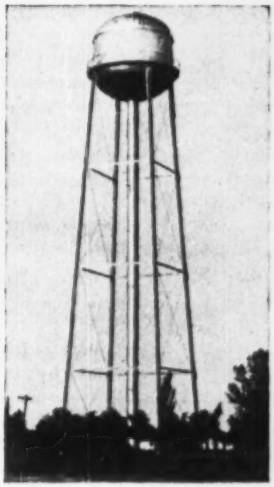

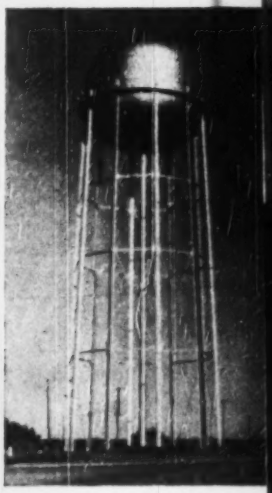

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DEVELOPMENTS ABROAD

INTERNATIONAL AIR TERMINAL—With commercial and tourist traffic becoming increasingly heavy at the Isla Grande airport in midtown San Juan, the Puerto Rico Transportation Authority has begun preliminary work on a new International Air Terminal at Isla Verde, 20 minutes outside the city. Construction of this modern airport and terminal, which will make Puerto Rico the air hub of the Caribbean, will take at least three years to complete at a cost of $12,000,000.—Hamilton Wright photo

Foreign Briefs

Big loan to Australia—The first dividends from Prime Minister Menzies' recent visit to the United States will be paid within the next few weeks. The World Bank will grant Australia a loan of about $100,000,000. Menzie "sold" the bank on the idea during his recent visit to Washington. It is the first credit advanced by the bank to help a member government carry out an ambitious immigration program. The money will go for housing, transportation, agricultural equipment, power and earth moving devices. Australia built its whole case for a loan on the need for assistance to accept more European immigrants, especially Italians. The bank decided it would be a good investment because it would help relieve overpopulation in western Europe.

Rome subway—Italian Transport Minister Ludovico D'Aragona is to ask Parliament for a 2,500,000,000-lire grant to complete Rome's first underground railway, it has been announced. Work on the underground, begun 12 years ago by Mussolini, was held up first by the war then by lack of funds. Now nearing completion, the underground will link Rome's central railway station with the southern outer suburbs of the city and the station for Rome's lido at Ostia.

Venezuelan airports—Grading and drainage have been started by the Venezuelan Ministry of Public Works at Palo Negro, in the state of Aragua, where a giant airport is to be built in the next few years. It will have two 10,000-ft runways, costing an estimated $10,000,000. A large terminal and several hangars are also included in the project, scheduled for completion by 1955.

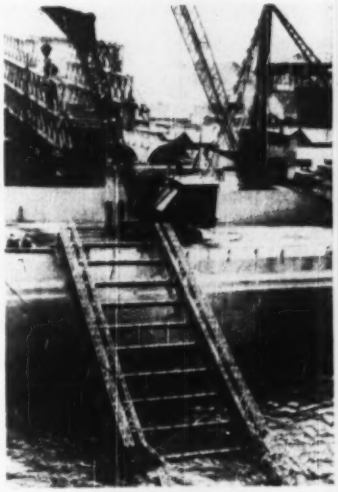
At the same time, a longer runway, at Maiquetia, the international airport serving Caracas, is under construction. This new runway, scheduled for completion before the end of this year, will be a mile long and 165 feet wide. Its ten-inch asphalt covered pavement will accommodate the heaviest commercial aircraft.

Puerto Rican bridge—D. B. Steinman of New York City, has been retained by Puerto Rico to design and supervise the construction of a new bridge over the Martin Pena Channel at San Juan. This bridge, estimated to cost about $1,000,000, will be an important link in the program of building modern highways in the metropolitan area of Puerto Rico, with joint funds of the insular and federal governments.

To complete Kiewa project—Representatives of United States, British, Swedish and French firms are expected in Australia to discuss the contract for completion of the final and major part of the Kiewa project, Victoria State's biggest hydro-power scheme. E. Bate, consulting engineer to the State Electricity Commission, says that the work probably will begin in 1951 and take five years to complete. The project on the Bogong High Plains includes a power station 655 ft underground and seven miles of tunnels. It will add 100,000 kw to the power of the area.

New wood dryer—A West German firm has developed a new wood dryer heated by steam or electricity, which will dry wood within five to six hours instead of, as previously, five to six days, DPA, the German news agency has reported. Foreign buyers are said to be interested in this invention. A first shipment has already gone to Switzerland, and negotiations are under way with Scandinavia, Holland, Turkey, South Africa and Hungary, the agency added.

PHOENIX-LIKE—Castries, capital of St. Lucia in the Windward Islands, is being rebuilt. On June 19, 1949, fire destroyed four-fifths of the city and left 2,292 inhabitants homeless. Executives in the picture study the model for the new town. They are, left to right, John Rose, Eric Mitchell, Allen Lewis, Frederick Dezogon and Francis Carasco.—Eastern Pubs. photo.



LONDON BRIDGE HAS FALLEN DOWN—Picture shows restoration work in progress on the 60-ft section of a Bailey bridge which fell into the Thames recently while it was being pushed out to meet the first of the six piers for the 1150-ft bridge which will carry traffic across the river to the Festival of Britain next year.—Combine photo

MUNICIPAL AFFAIRS

BUSINESS CENTER OF CINCINNATI—According to recent estimates, Cincinnati ranks 14th among metropolitan areas of the United States in the value of its manufactures. The city extends for about 25 miles along the river front to a width of about 15 miles, in an irregular area north of the stream.

Cincinnati pushes work on improvements

The Cincinnati Master Plan, completed in 1948 at a cost of $250,000 provides a blueprint for the city's development and for the coordination and redistribution of its traffic. Among the improvements planned are motorways, industrial areas, recreation facilities, public transit, urban and river-front redevelopment, and airports, including the Blue Ash Master Airport, a few miles north.

The city plan is to be completed by 5-year stages, and will serve as a basis for the proposal of bond issues to finance projects as they are submitted to the voters yearly.

The 1950 referendum bond program calls for $44,000,000 and includes such items as $16,000,000 for expressways; $3,425,000 for streets; $1,500,000 for sewers; and parks and playgrounds, $2,800,000.

The County of Hamilton program includes $6,000,000 for the Blue Ash Airport, $4,000,000 for sewers, and $2,000,000 for highways.

Cincinnati, on the Ohio River, with a 1950 population of around half a million, is one of the oldest and most progressive metropolitan areas in the United States.

By some authorities on municipal government Cincinnati is called "the best governed city." Under the city charter there is a council of nine members each elected for a 2-year term. The council elects one of their number as mayor, and hires a city manager to conduct the municipal business and implement the council's decisions.

Cincinnati suburbs like Walnut Hills, Hyde Park and Westwood, are unusually beautiful. They are built on a succession of irregular hills and are interspersed with many parks. The park system covers more than 3,500 acres.

The Ohio River is the great natural channel for the flow of commerce here, but Cincinnati, besides being a great river port, is served by eight railroads.

Since 1947, when the Mill Creek Barrier Dam for flood protection was completed by the Army Engineers at a cost of $10,000,000, Cincinnati's many industries have been safe from high water. There are about 140,000 workers in manufacturing establishments in the Cincinnati area.

L. A. seeks to eliminate backyard incinerators

Results of a series of official tests indicate that 90% of the particles sent into the air from Los Angeles' more than 500,000 home incinerators contribute to the smog menace.

Los Angeles County, Los Angeles City, the County Sanitation Districts and 45 incorporated areas outside Los Angeles city are planning orderly collection of combustible rubbish in order to eliminate backyard incinerators.

Director of the County Air Pollution Control District, Gordon P. Larson said that the survey revealed that "at least 25 tons a day of minute polluting particles from burning paper" are finding their way into the atmosphere over Los Angeles. Another 75 tons a day is contributed by burning rags and tree trimmings. In addition to solid particles contributed to smog by backyard incinerators, there are also aldehydes and other gases.

However, Los Angeles' long-time effort to get approval on various sites for municipally-owned combustible rubbish incinerators has met with steady opposition from home-owners at almost every site suggested.

Municipal Briefs

More improvements—The city council at Wilmington, N. C., has approved a $3,500,000 improvement program which inclues $1,300,000 for water and sewer extensions, $150,000 for street paving, $450,000 for drainage and $300,000 for new fire stations.

Smoke inspector—Samuel Moore, who resigned more than 10 years ago as smoke inspector of Canton, Ohio, has now been re-appointed. He is to carry out a 2-year education program to inform industrialists and householders how to control air pollution.

River clean-up—As a result of litigation by cities further down the Neuse River, Raleigh, N. C., has been advised by the court that it must provide sewage treatment facilities within five years. There will be held a referendum on bond issues including $1,346,415 for the construction of two sewage treatment plants.

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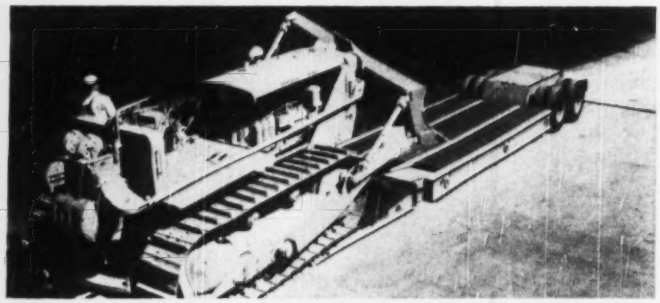
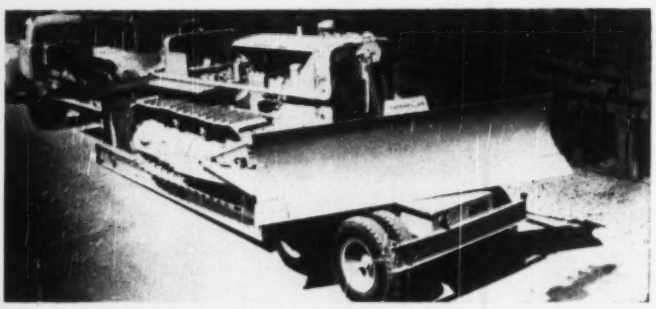
NEW EQUIPMENT

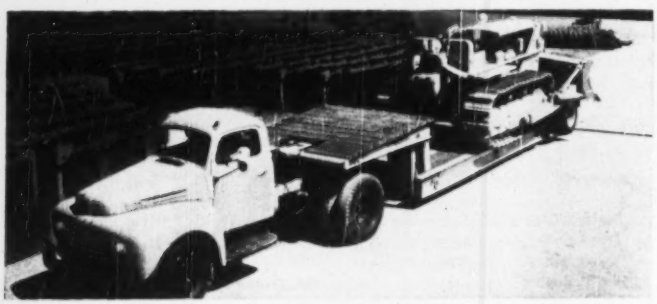
The Martin Machine Company, Kewanee, Illinois, has introduced a new trailer featuring a patented Folding Gooseneck which, when lowered to the ground, forms a loading ramp. The new trailer, in capacities up to 100-tons, eliminates cumbersome loading ramps and cribbing, reduces idle man and equipment hours. Loading can be accomplished by one man in a fraction of the time formerly required by several men. Low platform height, accomplished by front loading, provides greater clearance for viaducts, bridges and wires, assuring fast, safe movement between jobs. Like other Martin "Carryhaul" trailers, the new Folding Gooseneck will be sold exclusively through "Caterpillar" dealers. The sequence photos below show actual operation of the new Martin Folding Gooseneck.



Folding Gooseneck lowered to form ramp for loading D-8 "Caterpillar". Loading ramps and cribbing are eliminated. One man loads.



Folding Gooseneck being raised to towing position. Loading is easily accomplished in 5 minutes.



Ready to roll. Note low platform height which provides maximum clearance for viaducts, wires, bridges — greater safety.

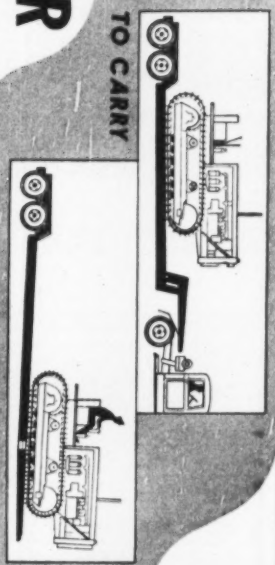
MARTIN

PRESENTS THE NEW

FOLDING GOOSENECK TRAILER

TO CARRY

. . . TO LOAD OR UNLOAD



MARTIN CARRYHAUL TRAILERS

MARTIN MACHINE COMPANY
KEWANEE, ILLINOIS—YOUR CATERPILLAR DEALER IS YOUR MARTIN DEALER

Write for complete information and specifications on the new Martin FOLDING GOOSENECK TRAILER.

(advertisement

MEN AND JOBS

Vincent B. Phelan has retired from the staff of the National Bureau of Standards after 23 years there and 32 years with the government. He is the author of the government's best seller, "Care and Repair of the House."

Col. John L. Person, U.S. district engineer at Louisville, Ky., has been assigned to Fort Leonard Wood, Mo.

Robt. W. Jennings, construction engineer for the Paonia project for over two years, has been made area engineer for the new Grand Junction office of the Bureau of Reclamation to include supervision of activities in the Colorado, Gunnison, White and Zampa river basins of western Colorado. He is C. E. graduate of Utah State Agricultural College, 1933. In World War II he directed large construction jobs in the South Pacific.

After nearly a quarter-century in charge of canal designing for the Bureau of Reclamation, Harry R. McBirney has retired. Announcing the retirement, Acting Chief Engineer W. E. Blomgren of the bureau, declared McBirney is one of the engineering experts most responsible for the high degree of western water conservation today. "McBirney, while a design engineer on the Boise project, developed new and more economical types of canal structures and was largely responsible for the standardization of such designs for the entire Bureau by the Chief Engineer," Blomgren said.

Rear Admiral Kenneth Keith Cowart has begun a four-year term as Engineer-in-Chief of the United States Coast Guard at Headquarters, Washington, D. C., in the office of the Commandant, Vice Admiral Merlin O'Neill. He succeeds Rear Admiral Ellis Reed-Hill, whose term of office expired last Aug. 1, and with whom Admiral Cowart, then in the rank of captain, served as assistant engineer-in-chief since 1946. In 1942 as engineer officer of the Cutter "Campbell" he was awarded the Silver Star "for conspicuous gallantry and intrepidity during and following the sinking" of an enemy submarine.

Col. Earl P. Houston, for the last three years project engineer for the Memphis, Tenn., harbor project, is now commander of the 347th Construction Group Headquarters and has begun mobilizing the unit at Memphis General Depot for active duty.

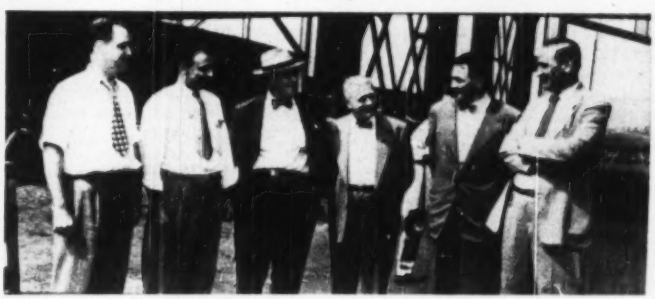
Lt. Col. Edmund Kirby-Smith is now executive officer of the Galveston district, Corps of Engineers, replacing **Lt. Col. Chas. D. McDaniel,** ordered to troop duty.

James L. Lytel, a 1900 graduate of the University of Nebraska, who retired last November from active duty with the International Boundary and Water Commission, is now living in retirement in Chula Vista, Calif. His experience included: Party chief with the U.S. Engineers, Havana, Cuba, 1900-02; party chief on the Mexican Control RR, 1902-04; Bureau of Reclamation: construction manager, four years, on the Buenos Aires subway; and 1933-1949 project engineer in charge of the Lower Rio Grande flood project for the International Boundary and Water Commission.

R. B. Seusabaugh is city engineer of Gainesville, Fa.

Chas. L. Bell has been appointed chief deputy city engineer of Los Angeles, Calif.

Maj. Robert S. Kramer has become executive officer of the U.S. Corps of Engineers, New Orleans district, replacing Lt. Joseph P. O'Hanlon, who has been transferred to Fort Belvoir, Va. Major Kramer was assistant professor of military science and tactics at The Citadel, Charleston, S. C., where he served for the past three years. He is a graduate of West Point, 1941. He served in the Philippines and Southwest Pacific during World War II.

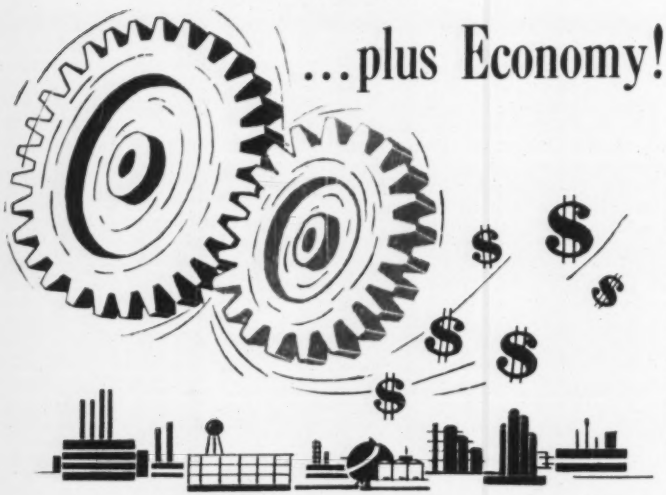


Construction and engineering teams from Merritt-Chapman & Scott Corp. and the Port of Boston Authority who will be responsible for building Boston's new Mystic Pier No. 1, held an impromptu field conference at the recent official ceremony launching the project. Left to right, are: Charles Sullivan, resident engineer for the Port of Boston Authority; John Davagian, project engineer for Merritt-Chapman & Scott; H. M. Hallett, Port Authority project engineer; Ralph E. DeSimone, vice-president of Merritt-Chapman & Scott in charge of marine and heavy construction; George L. Wey, chief engineer for the Port of Boston; and Charles Richardson, M-C & S project manager.

Capt. John P. Agnew, Jr., has been named executive officer for the Mobile District, Corps of Engineers. He has been serving as assistant resident engineer at the Allatoona Dam project near Cartersville, Ga. He is a graduate of Alabama Polytechnic Institute.

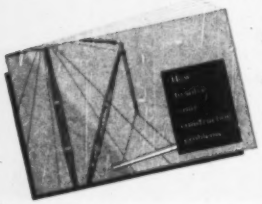
John B. Brown and **Heinz F. Poppendiek,** engineers, joined the technical staff of the Oak Ridge National Laboratory.

Fast Action ...plus Economy!



M-C & S is geared to meet today's construction needs!

From the moment a project is assigned to Merritt-Chapman & Scott, you can count on *action*. Working in close harmony with you, M-C & S brings its specialized skills and unrivalled facilities to bear on the job. Merritt-Chapman & Scott project managers possess the experience and ingenuity that assure fast, on-the-spot solutions whenever unexpected problems arise. Examples of M-C&S's ability to complete various types of projects as designed, on time, are contained in the illustrated brochure offered below.



New booklet presents a factual record of M-C & S's ability to solve the most challenging construction problems. Your copy will be sent immediately upon request to Dept. ENR-4.

MERRITT-CHAPMAN & SCOTT
CORPORATION

Founded in 1860 . . . now in our 90th year

GENERAL OFFICES
17 Battery Place, New York 4, N.Y.
CLEVELAND • BOSTON • NEW LONDON

Wm. Dean Faint is now a registered engineer and architect at 1915 Browning Road, Pennsauken 8, N. J. Previously he was a consulting engineer at W. D. Faint & Co.

Frank A. Jacocks, civil engineering graduate of the University of North Carolina, has been named city manager of Spartanburg, S. C., succeeding **T. Edward Temple**, resigned to become city manager of Danville, Va. Jacocks recently has been serving as city manager of Rock Hill, N. C., and formerly was director of the division of sanitation at Charlotte, N. C., an engineer with the U. S. Public Health Service in Washington and public health engineer of the North Carolina State Board of Health in Raleigh.

Maj. H. C. Schroder, assistant resident engineer on the Huntington, W. Va., flood protection works, has been transferred to Louisville, Ky., to become executive officer there for the Army Engineers.

Ray Crow has retired as city manager of Homewood, Birmingham, Ala., area, and will make his future home in Florida. He is a civil engineer, and was connected with the Tennessee Coal, Iron & Railroad Co. for 25 years.

Lt. Col. Jas. W. Sloat has been assigned as executive officer of the Portland, Ore., district, Corps of Engineers, succeeding **Col. Geo. A. Finley**, now Rock Island, Ill., district engineer.

George T. Papageorge, director of public works for Montgomery County, Md., has resigned and been named chief of the Urban Redevelopment Commission in Atlanta, Ga., where he was administrative director of the Fulton County Planning Commission before his appointment to the Montgomery County post.

F. W. Liddle, city manager of Hazel Park, Mich., has been named chief engineer of Ecorse.

Benjamin W. Guppy, engineer of structures for the Boston & Maine and Maine Central railroads and the Portland Terminal Co., has retired after 61 years' service. Upon being graduated from the Massachusetts Institute of Technology in 1889, he joined the Boston & Maine as a transitman. In World War II he was a lieutenant-colonel in the 14th U. S. Engineers and was superintendent of port facilities at St. Nazaire, France. His successor is **Roy N. Brodie**, assistant structural engineer of the Boston & Maine. **Thomas K. Dyer** takes over Brodie's former post.

Barber-Greene *Photo-News*

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ON-THE-JOB VIEWS AND COST-SAVING IDEAS VOLUME 1—NUMBER 4

PERIPATETIC* DITCHER FEATURES NEW "HYDRA-CROWD" CONTROL

*Peripatetic, according to Webster, means performing while moving about. Barber-Greene's literal translation can be found in the new Runabout . . . the ditcher that keeps ahead of the job, traveling from job to job at 15 mph. and instantly ready to dig. Already a favorite among gas, telephone, water and power companies—as well as contractors—(A West Coast Utility user traveled to 94 different job sites and cut 18,000 feet of service trench and 243 3' x 4' bell holes—yet 59% of the Runabout's time was charged "to waiting for completion of other operations"), the Runabout promises still wider preference with the advent of "Hydra-Crowd."

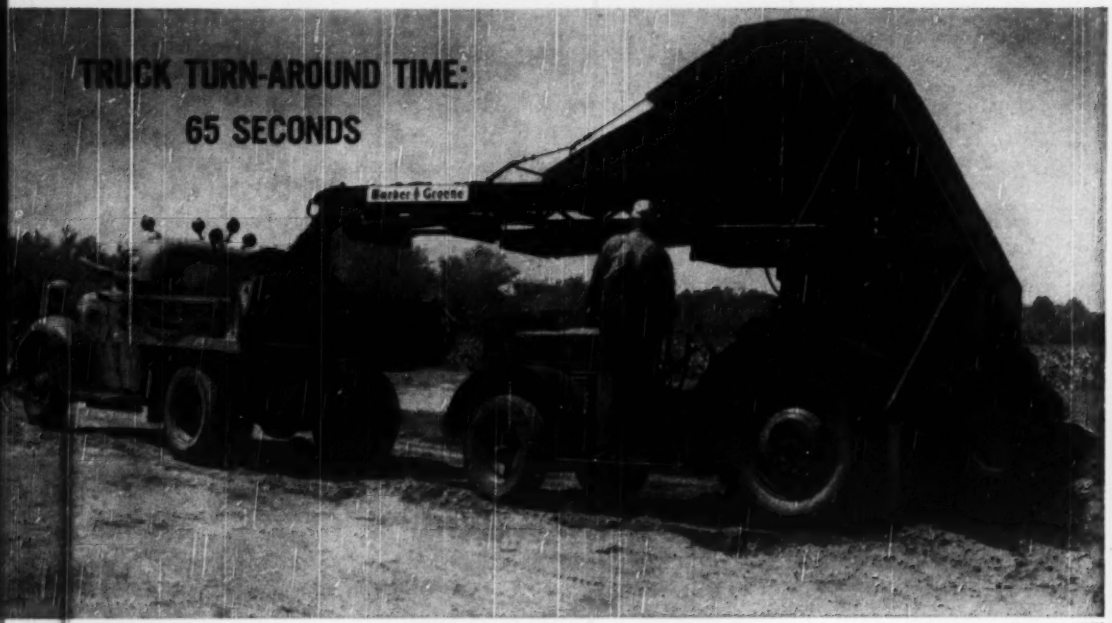
"Hydra-Crowd"—hydraulic control of the driving wheels—gives the Runabout an infinite range of digging speeds (0-16 fpm.) independent of bucket line speeds. For instance, in frozen ground, wet soil or blacktop pavement, a high bucket line speed and low forward speed are required. On the other hand, conditions may permit lower bucket line speeds and faster forward speeds. This combination of the right forward speed with the right bucket line speed, makes the Runabout a true all-ground, all-weather ditcher.

The Runabout is driven to job from comfortable cab . . . automotive-type controls makes travel fast and safe . . .

. . . it's easily spotted on digging line, even in cramped work areas . . . cuts right up to sidewalks, foundation, etc. . . .

. . . goes to work fast—a complete one-man ditcher, accurate control of forward and bucket line speeds from ground or cab.

Barber-Greene *Photo-News*



4N582

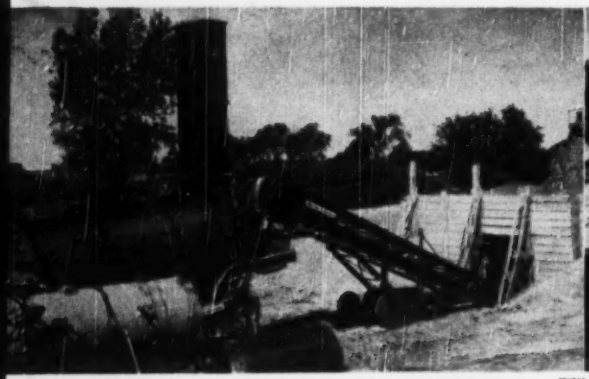
The Highway Commission of Wood County, Wisconsin, loads trucks in a hurry and at small cost with this rugged one-man bucket loader that fills a 4-yard truck in 65 seconds, a 5½-yard truck in just 80 seconds. By utilizing the B-G "Constant-Flow" principle, their loader saves up to 60% of all truck time compared with intermittent swing loading. This highly maneuverable, self-propelled loader can go to any place in the country for shoulder clean-up or to load from stock pile or windrow . . . gravel, stone, sand, earth, and other free-flowing materials, or even to strip top soil. Hydraulic Trimmer permits even loading without spillage. Wherever it's put to work, you find economical one-man loading that can keep a whole fleet of trucks working with minimum turn-around or "jockeying" time. Still another feature is the fact that at a negligible cost, it can be converted to a 7 cu. yd. per minute Snow Loader, if desired.

SHORT-CUT TO SURE SAVINGS

Judd Brown, bituminous contractor of Mankato, Minn., took a short-cut and is now feeding his blacktop plant economically and efficiently with a B-G Portable Belt Conveyor. He eliminated the waste and expense of a crane and now enjoys the economy of constant flow operation . . . with a minimum labor force.

THE RIGHT REACH FOR RAILROAD CARS

The long reach of this B-G Bucket Loader is just right for the Dolomite Products Company of E. Rochester, N. Y. They use the hydraulically controlled swivel conveyor to good advantage in loading railroad cars to full capacity — without spillage. With its portability, it can quickly (15 mph.) run to any siding and begin operating.



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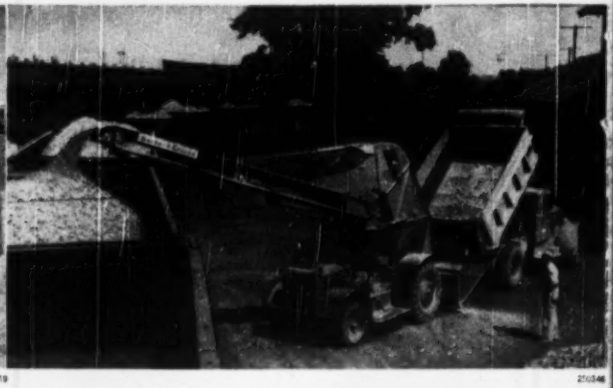
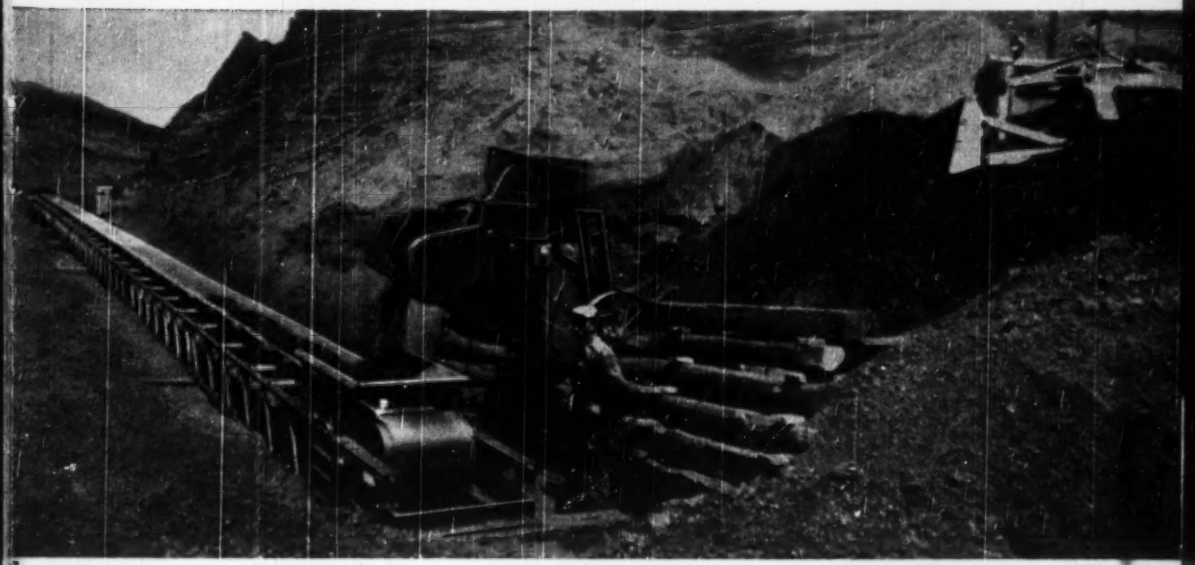


21034B

for full, fast information on any equipment

Barber-Greene *Photo-News*



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FOUND UNTAPPED FORTUNE IN WASTE

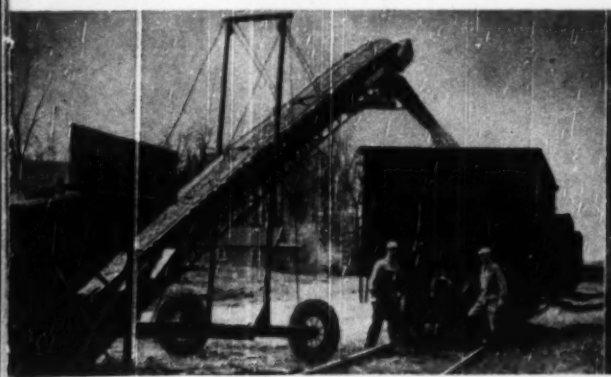
Reclaiming millions of tons of anthracite silt from waste piles promised large returns to the Carbonizing Coal Co. of Audenreid, Pennsylvania. This material, containing as much as 70% fine sized coal, was considered waste until recent developments made it a popular fuel. Carbonizing Coal Co. solved the many problems of high-capacity reclaiming and long distance moving with versatile B-G equipment. The long, flat bed of B-G Car Unloaders makes an efficient feeding platform onto which bulldozers shove the silt. The unloaders, in turn, discharge onto 24" x 150' B-G belts. These field conveyors feed the main 400' belt that builds a surge pile at the processing plant. Here's a typical example of how B-G engineering can solve special problems with "off-the-shelf," easily assembled, standardized conveyors.

1056 TONS OF STONE IN ONE DAY

With the help of a B-G Heavy-Duty Portable Conveyor, the Pallette Stone Corp. of Saratoga Springs, N. Y., has a neat, inexpensive and highly efficient car loading station. Fed by ten-ton hopper, this conveyor fills a 65-ton car in just 22 minutes. Swivel wheels permit trimming the average 17 cars loaded in a 7½-hour day.

ARIZONA BEAUTY IN "TIFFANY SETTING"

Motorists who smoothly roll down U. S. Highway 70 between Miami and Superior, Arizona, really enjoy the unfolding Arizona beauty, thanks to the smooth surface recently laid by Tiffany Construction Co., of Phoenix. B-G Finishers did the job efficiently — paving without forms and with a minimum of traffic interference.



on these pages---see your B-G Distributor

Barber-Greene *Photo-News*

DIGS TRICKY DITCH WITHOUT A HITCH

Accurate B-G Ditcher performance recently saved the town of Lawrence, Kansas, a lot of time and expense. As a part of the street improvement program, a mile and a half of trench was required to contain new storm sewers. This line had to be right up to the curb on one side, and just clear the existing water main on the other. The Barber-Greene Vertical Boom Ditcher literally "felt" its way to the proper depth under the operator's positive control. Sensitive B-G overload release prevented the breaking of water mains or damage to the machine. This precision cutting and ability to maintain grade and accurate direction, together with easy response to controls, enabled the contractor to complete a tricky job without expensive penalties or damages.

UNCOVERS GAS PIPE JOINTS IN SEVEN MINUTES

Repacking gas pipe joints in quantity is an easy task for the Consolidated Gas & Service Co., of Chicago when its B-G Ditcher can uncover them in less than seven minutes . . . even though some are seven feet down. Working around the calendar, this husky Ditcher has no regard for weather, hot or cold, or adverse ground conditions . . . in frozen ground, wet soil, sandstone, or clay. Here you see it on the job in Beloit, Wis., just after completing 600 holes in Janesville . . . and it is scheduled for work throughout the winter.

250574

DEPEND ON FACTORY-TRAINED SALES AND SERVICE MEN

When you have a problem affecting your business—your profit—you seek expert assistance. You want advice that will result in an efficient, economical solution. No one is better qualified in his field to give this dependable advice than your factory-trained Barber-Greene Representative.

He is qualified by years of field experience and intensive factory training to help you cut costs by eliminating expensive equipment and excessive manpower.

He knows how to apply B-G equipment to assure the most in economical performance on your job . . . he knows how to show you the best in maintenance practices. Ask him for complete information—bulletins, specifications and prices on any or all B-G equipment—or call, write or wire directly to the address below.

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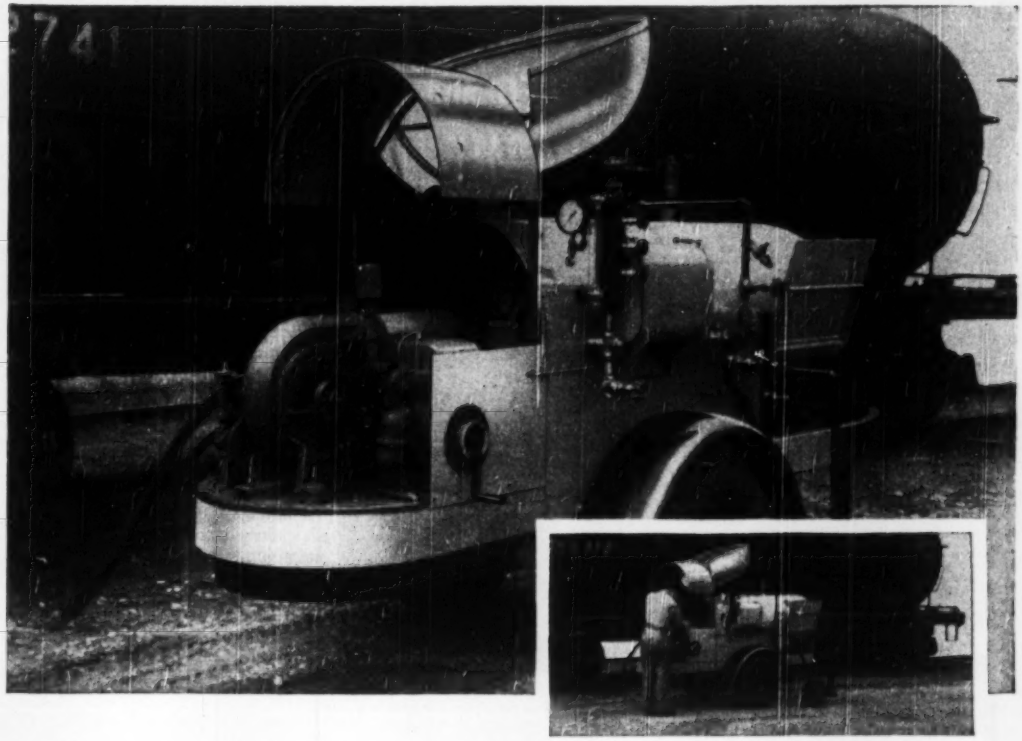
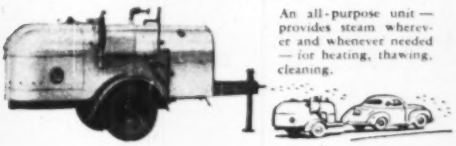
BARBER-GREENE COMPANY

AURORA, ILLINOIS, U. S. A.



FAST STEAMING—FOR FAST TANK-CAR HEATING

Trailer or Truck Mounted for Quick Job-to-Job Transport



An all-purpose unit — provides steam wherever and whenever needed — for heating, thawing, cleaning.

Working Mate to the Tank-Car Heater — The Pumping Booster

Heat only what you need — not necessary to heat contents of tank car — with a Cleaver-Brooks Pumping Booster. No steam or water required for operation with this oil-fired, high efficiency unit. Available in 2 sizes, skid or trailer mounted.

Write on your business letterhead for the Bituminous-Mix Calculator — a ready reference slide rule showing weight of mix needed in lbs. and tons based on area and depth of area to be covered.

. . . Use Less Fuel—Water—Work With a CLEAVER-BROOKS Mobile Tank-Car Heater

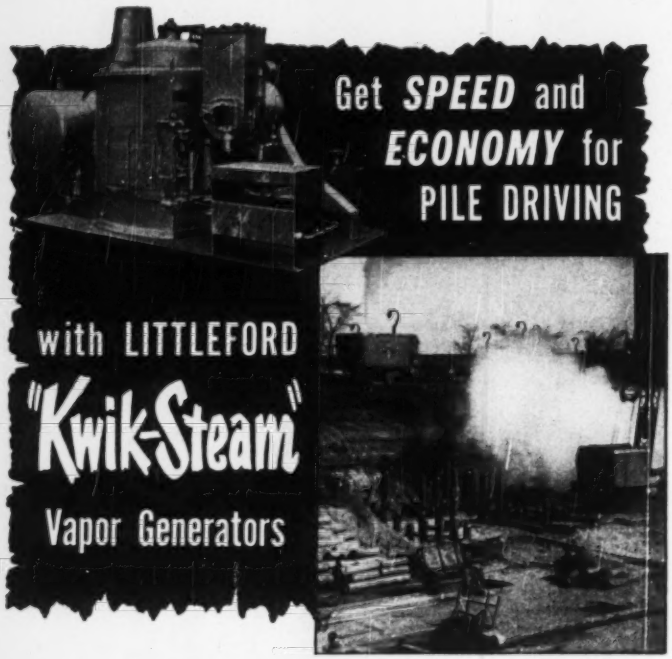
Designed for fast steaming, the Cleaver-Brooks gives you 125 lbs. steam pressure in 20 minutes — the only tank-car heater with the fuel-saving four-pass flue travel construction. No water problem — full condensate recovery and return to heater under pressure.

Built for full capacity—full time work—available in three sizes, skid or trailer mounted 1 car heater (17 bhp) — 2 car heater (28 bhp), 3 car heater (42 bhp). Write for the Cleaver-Brooks Tank-Car Heater Catalog.

CLEAVER-BROOKS COMPANY
389 E. Keefe Avenue, Milwaukee 12, Wisconsin

Cleaver-Brooks

BUILDERS OF EQUIPMENT FOR THE GENERATION AND UTILIZATION OF HEAT



Steam in two minutes from a cold start! The fastest, most modern unit in the construction industry! "Kwik-Steam" Generator is automatically controlled at a predetermined pressure. Saves men's time, uses low-cost fuel oil; cuts as much as 50% in fuel and labor. "Kwik-Steam" Generators are coil type, guaranteed 75% overall efficient, regulate between 75 and 300 lbs. operating pressure, small, compact, light, foolproof. Also perfect for steaming aggregate cars, heating water, operating steam hoists, cleaning equipment, heating tank cars at asphalt plants. Made in sizes producing from 500 to 4000 lbs. of steam per hour. Send for Bulletin AA-22.

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BLACK TOP ROAD MAINTENANCE EQUIPMENT SINCE - 1900
LITTLEFORD BROS., INC.
415 E. Pearl St., Cincinnati 2, Ohio

International structural steel was used in the new Bernardin Bottle Cap Co. building, Evansville, Ind.

You'll Build Faster If You Build With *International Steel*

Here is the one place you can be sure of good delivery of structural steel — to fit your exact specifications. International's large stock of various steel shapes, standardized methods of manufacture, and a large, well-staffed plant make quick delivery possible.

You will find International Steel will cut your expenses by eliminating delays and by giving you exactly what you need. Write today for our prices.

INTERNATIONAL STEEL CO. 1803 EDGAR ST. • EVANSVILLE, IND.

OBITUARY

James M. Rawls, 70, retired topographic engineer of the U. S. Geological Survey, died Sept. 30 at St. Augustine, Fla. A graduate of Emory University, Atlanta, Ga., he joined the survey in 1903. In 1912-13 he helped map parts of the Hawaiian Islands. In World War I he was a lieutenant in the Army Engineers.

Richard L. Richards, 47, building contractor of New Hartford, N. Y., was killed in an airplane accident Sept. 29. He had frequently used his plane in business trips. He was widely known as a contractor in the Central New York area.

Albert R. Thayer, field coordinator of the Minnesota highway department's planning and survey division, died recently in Minneapolis. Formerly he had been chief valuation engineer of the Northern Pacific Railway.

Joseph H. Duffy, 61, New Albany, Ind., street department superintendent, and associated with the Indiana Highway Commission from 1933 to 1940, died Sept. 27.

Alfred A. Berrick, 90, a former contractor who supervised the erection of several well known Buffalo, N. Y., landmarks, died Sept. 30 in East Aurora, N. Y. He joined his father, a contractor, in the firm of Charles Berrick & Sons Co. and when the father died in 1903, Alfred continued the business with his brother, the late John F. Berrick. He retired from this firm in 1910 but more than three decades later he again became interested in the construction business and was president of Berrick-Wright, Inc. from 1943 to 1948. He was a past president of the Buffalo Builders Exchange and a former member of the Buffalo Grade Crossing Commission.

Maj. George E. Lamb, 73, retired Army construction engineer, died in Washington, D. C., Sept. 24. He earned his master of science degree at M.I.T. and joined the Army during the first world war, and later was in charge of construction at various Army posts. He went to Washington in 1936 as head of the Army's Plans and Estimates division.

Col. Edward D. Rich, 81, Lansing, Mich., the first sanitary engineer for Michigan, died Sept. 29. He was named to that post in 1913. He served for 35 years and retired two years ago.

William W. Bucher, 58, president of

R. E. Brooks Co., distributors of heavy contracting machinery at 50 Church St., New York City, died at Summit, N. J., Oct. 3. Last year he was president of the Associated Equipment Distributors of America.

Bert H. Peck, 65, one-time engineer of the Washington, D. C. Public Utilities Commission, died Sept. 27 in Moncton, N. B., after an automobile accident Sept. 7. A consultant engineer with various utilities and rate regulation bodies, Mr. Peck was chief engineer of the District PUC for about six months in 1930 and 1931. He also worked for the Illinois Public Utilities Commission, the Illinois Light and Power Co. and the Washington Gas Light Co.

Harold H. Robertson, 72, founder and chairman of the board of the H. H. Roberston Co., Pittsburgh, Pa., died Sept. 19. It was in 1905 that Mr. Robertson began to develop the idea of protecting steel to lengthen the service life of industrial buildings. From a small beginning in Canton, Mass., he moved to Beaver Falls in the Pittsburgh district, thence to the present location in Ambridge, Pa., where the plant covers more than 33 acres. Additional plants in Canada and England handle the world-wide demand for the many products that resulted from Mr. Robertson's development and research.

Engineers sue city

The city of Decatur, Ind., is being sued for $27,000 by the consulting firm of Consoer, Townsend and Associates, Chicago, in Circuit Court at Decatur. The complaint said a contract was signed by the city with the Chicago firm for services of surveying the city's sewer system, then drawing up plans and specifications of the improvements. The firm said they did the work, and is asking for payment. The engineers said the federal government paid it $14,600 as its share, and they are now seeking the rest of the contractural cost of $41,974.30, plus court costs, interests since July 1, 1950, and accrued costs.

Decatur City Attorney Robert S. Anderson states that the engineering firm signed a contract in which it was mutually agreed that the work was to be paid for from proceeds of the sale of city revenue bonds. As no such bonds had yet been sold, the attorney said, it was not yet possible to pay the contractor.

Attorney Anderson also stated that the City of Decatur had, and still has, the highest regard for the contractor and the members of the firm.

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SHARPER PRINTS
by any process!
with the world's largest selling
VENUS
DRAWING PENCILS
• ACCURATELY GRADED —in 17 degrees
• STRONG—the lead is Pressure-Proofed*
• SMOOTH—the lead is COLLOIDAL* processed
*Exclusive Venus Patent
They hold their points, give clear, opaque lines for clean, sharp reproduction. No smudge; no ghosts from erasures. They're smooth in action. Lines are uniform in weight and tone. There's the right degree for the tracing paper you prefer. Better prints—by any process!
AMERICAN PENCIL CO. NEW YORK-VENUS-DRAWING
AND FOR RENDERING—PERFECT TONAL VALUES WITH THE SOFTER DEGREES—HB TO 6B.
TRY THEM—on your drawing board! Technical Test Kit—FREE!
AMERICAN LEAD PENCIL CO. Hoboken, New Jersey
LOOK FOR THE GREEN CRACKLED FINISH!

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ELECTIONS AND ACTIVITIES

Many types of city and regional plans were discussed at the annual Conference on City and Regional Planning recently at the Massachusetts Institute of Technology. The conference, which was in session two weeks, held an extensive course covering both the administrative and technical aspects of planning. Prof. Frederick Adams discussed the elements of a plan for the physical development of a region, with emphasis on urban redevelopment and housing. Flavel Shurtleff discussed existing legislation for zoning and subdivision control, housing and redevelopment.

The National Constructors Association has announced plans for a nation-wide safety program to reduce lost time accidents in field construction operations. The association is composed of a large number of major engineering and building firms which specialize in designing and construction of oil refineries, steel mills and chemical plants. "Each one of our members has been individually attacking the safety problem most vigorously," said J. F. Pritchard, president, "but I feel sure that an organized exchange of ideas and methods and a combined effort as a group will be much more effective."

Albert Sachs, Lewiston, Mich., has been elected president of the Northern Michigan Road Commissioners' Association to succeed Ira Fuller. Mr. Sachs is chairman of the Montmorency County Road Commissioners Association. Other officers elected are: Vice-president, Wayne Wood, member Mecosta County Road Commission; secretary, Benjamin D. Jeffs, chairman of the Missaukee County Road Commission; and treasurer, N. E. Wicks, chairman of the Lake County Road Commission.

William B. Davis, president of Davis Realty Co., Hammond, Ind., has been elected president of the newly-organized Junior Home Builders of Chicagoland. He is the son of Roy Davis, prominent Chicago and Hammond builder. Other officers: Brittain C. MacIsaacs, vice-president; Joseph E. Merrion, Jr., secretary; Ralph Smyka', treasurer; Larry Laurence, Donald Kovar and Edward Sawyer, Jr., directors.

More than 100 registered engineers met to organize the Delaware Society for Professional Engineers. The first session was devoted to initial procedures in the formation of a local chapter of the National Society of Professional Engineers. Paul H. Robbins, executive director of the national group, was among the speakers.

Thomas R. Camp of Boston has been named president of the New England Water Works Association. Others elected were: Frederick G. A. Almquist, Hartford, Conn.; and Stanley M. Dore, Boston, vice-presidents; William F. Melley, Milton, Mass., treasurer; and Joseph C. Knox, Boston, secretary. Samuel Jacobson and Marshall S. Wellington, both of New Haven, Conn., were cowinners of the Dexter Brackett Memorial Medal for work done on a recently published paper.

B. O. Vannort of Charlotte, N. C., was elected president of the South Piedmont Chapter, Professional Engineers of North Carolina, at an organizational meeting at Charlotte Sept. 29. Other officers: O. W. Moseley, first vice-president; D. M. Mackintosh, Jr., second vice-president; W. P. Wells, secretary-treasurer; M. E. Beatty, delegate to the state association; and G. J. Fisher, G. S. Rawlins and A. C. Lee, directors. The membership includes engineers from Mecklenburg, Cleveland, Gaston, Lincoln, Catawba, Alexander, Iredell, Cabarrus, Rowen, Stanly and Union counties.

CALENDAR

National Public Health Engineering Conference, University of Florida, Gainesville, Oct. 23.

Structural Clay Products Industry, Broadmoor Hotel, Colorado Springs, Colo., Oct. 23-26.

American Institute of Steel Construction, Shamrock Hotel, Houston, Tex., Oct. 23-26.

American Concrete Institute, Mayflower Hotel, Washington, D. C., Oct. 24-26.

California section, AWWA, U. S. Grant Hotel, San Diego, Calif., Oct. 24-27.

Carolinas Branch, A.G.C., White Sulphur Springs, W. Va., Oct. 30-31.

Chesapeake section, American Water Works Association, DuPont Hotel, Wilmington, Del., Nov. 1-3.

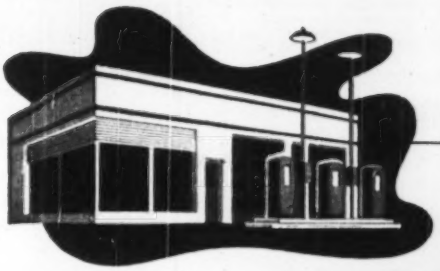
Florida and Cuban sections, American Water Work Association, Ft. Lauderdale, Fla., Nov. 13-15.

National Reclamation Association, Hotel Davenport, Spokane, Wash., Nov. 14-17.

Building Research Advisory Board, Research correlation conference, National Academy of Sciences Bldg., Washington, D. C., Nov. 21.

Indiana Water Conservation conference, Purdue University, Lafayette, Ind., Nov. 28-29.

Arizona Sewage & Water Works Association, Pioneer Hotel, Phoenix, Ariz., Nov. 30-Dec. 2.



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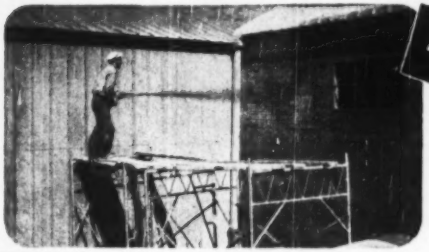

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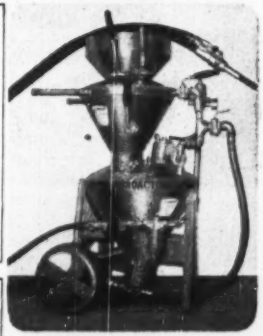
Model 1000 BONDACTOR inset at right.



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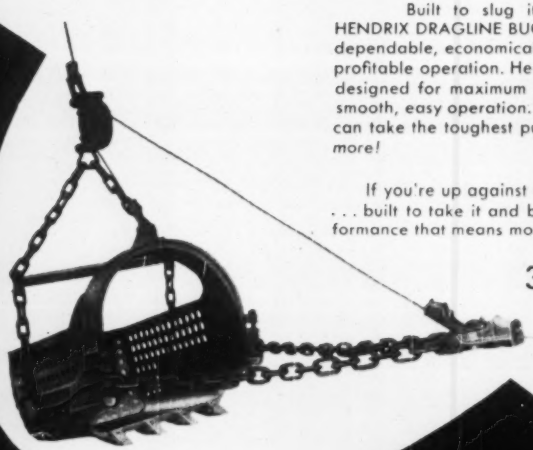

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EDUCATION and RESEARCH

Climate made to order at University of Toledo

Climate made to order will be available in a sealed and insulated room to be constructed at the University of Toledo. The room will be used by the university's Research Foundation to test the effects of heat, cold, and humidity on various building materials.

Archie Solberg, executive director of the foundation, said the room will be of particular value in research on concrete blocks and similar materials for the U. S. Army and the Housing and Home Finance Agency. It will include a gas heating system, and a humidity regulator, and will be air conditioned and moisture proof. Various types of materials will be used in the walls, and by means of controls on the outside, it will be possible to observe to what degree heat passes through at different inside and outside temperatures and different conditions of humidity. Some wall sections will be removable, so that if a manufacturer wants a test on his product, it can be inserted. The room will be 27x34 ft in size and cost about $8,000 to construct.

NBS develops rapid test for sulfate resistance

W. C. Taylor and R. H. Bogue of the National Bureau of Standards have discovered a method of determining within six hours whether or not a portland cement will be susceptible to attack by sulfate ground waters.

In the past, the sulfate resistivity of various types of cements has been evaluated by measuring the change in length, strength or appearance of bars or slabs of mortar stored in sulfate solutions for several months. This procedure had the additional disadvantage that the physical character of the specimen sometimes had a pronounced effect on the results.

The NBS test overcomes these disadvantages. It involves only measuring the amount of sulfate removed from solution in 6 hours when a small sample of the cement (adjusted to a known sulfate content) is continuously shaken with a saturated lime-water solution. The percent change in sulfate content is called the "sulfate reaction value" and indicates the susceptibility of the cement to attack, the lower the value, the greater the resistance.

Thus, a cement having a sulfate reaction value up to 50 may be expected to have considerable resistance to attack. On the other hand, a cement with a reaction value over 65 probably will be weak. Cements with values between 50 and 65 are borderline.

While it cannot, in general, be depended upon to resist sulfate attack, concrete made with one of these cements may be durable in sulfate exposure if it is dense and impermeable and free of other harmful agents.

In this range of cements, good workmanship is absolutely necessary and air entrainment may be beneficial.

More details on this new test method may be obtained from the Journal of Research, National Bureau of Standards 45, Sept. 1950, RP2128, Washington 25, D. C.

Sewage treatment films available for study

A series of four film strips on sewage treatment practices is now available for use in engineering study groups and for public education. The film strips were prepared by the Communicable Disease Center of the Federal Security Agency, and are available at its headquarters, 605 Volunteer Building, Atlanta, 3, Ga.

Part I depicts typical sewage treatment in primary plants, showing structure and equipment of such plants; Part II shows units, structures and details of equipment used in chemical precipitation plants for sewage treatment processes; Part III shows operation of trickling filter plants and biological aspects of sewage treatment processes; Part IV is devoted to a detailed explanation of activated sludge and vacuum filtration units.

PROF. GUSTAVE P. R. MAGNEL of the University of Ghent, Belgium, who, with Eugene Freyssinet of Paris, has been awarded the Frank P. Brown Medal by the Franklin Institute, Philadelphia, Pa., for their outstanding development of engineering techniques for prestressed concrete.

New courses

Illinois—The college of engineering, University of Illinois, is offering five related safety courses for industrial and engineering projects in four areas throughout the state.

Delaware—A University of Delaware extension course in advanced highway engineering will be held this fall. Prof. Charles N. Gaylord, head of the civil engineering department, will direct the course. The class is open to Delaware State Highway Department engineers and other persons with a civil engineering background now employed by contractors, municipalities, industry or elsewhere.

Kansas—Building construction techniques, covering the use and application of concrete, reinforced concrete and structural steel design, will be offered in two classes sponsored by the University of Kansas extension center. F. J. Mueller of the Portland Cement Association is the instructor on concrete, and Henry A. Crandall, of the Kansas City public works department, on the design of reinforced concrete and structural steel.

Educational Notes

New dean—William J. Farrisee, since 1946 dean of men at Clarkson College of Technology, Potsdam, N. Y., has been named for the new position of dean of the college. He went to Clarkson in 1922 as an instructor in civil engineering and served in that department for 23 years and became a full professor. He is a graduate of MIT and has taught at Illinois, Yale and Syracuse.

Better salaries for teachers—The North Carolina Engineering Foundation has set a goal of $1,000,000 to be raised for supplementing the state salary scale in attracting top-ranking teachers for research and instructional duties at the N. C. State College School of Engineering. C. A. Dillon of Raleigh was re-elected president, John W. Clark of Franklinville, vice-president; L. L. Roy of Raleigh, secretary; and J. C. Van of Raliegh, treasurer. The foundation elected an executive committee and 60 directors. The executive committee is William Muirhead, J. M. Peden of Raleigh, C. D. Faucette of Durham, LeRoy Martin of Raleigh, David Clark of Charlotte and John W. Clarke of Franklinton.

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UNIT PRICES BID BY CONTRACTORS

Terminal reservoir Salt Lake City, Utah

Five of the 11 bids received on the terminal reservoir of the Salt Lake aqueduct, Provo River Project, Utah, were below the engineer's estimated $1,491,352. The low bid at $1,259,940 was 18.4% below the estimate, 3.7% below the second low bid. The bids, 51% apart, were opened Sept. 1 by the Bureau of Reclamation.

The job site is at the southeast edge of Salt Lake City. The work includes construction of two 20 MG capacity concrete reservoirs with inlet and outlet connections to the existing 69-inch Salt Lake aqueduct; venturi meter structure; chlorination and control house; 48-inch concrete pipe wasteway, 3,650 feet long; and 7-foot chainlink fence. All materials and equipment will be supplied by the contractor except 6- and 9-inch rubber water stops and the 69-inch precast concrete pipe units, which the contractor must remove and relocate to provide connections. Presses and molds for making splices in the stops, belonging to the government, can be used by the contractor upon request.

All work required to deliver water safely through the Salt Lake aqueduct to the existing Sam Park Reservoir, directly north of the construction, must be completed in 200 calendar days, under penalty of $300 for each day's delay. All work must be completed in 450 days, with a $250 penalty for each day work goes beyond this time.

Wages prevailing are carpenters and cement finishers, $1.875 an hour; electricians, $2.30; power equipment operators, from $1.55 to $2.225; unskilled laborers, $1.325; pipe setters, $1.45.

Bidders included:

1 Peter Kiewit Sons' Co., Arcadia, Calif. (contract)	$1,259,940.00
2 A. S. Horner Const. Co., Denver	1,306,676.40
11 Grafe-Callahan Const. Co. & Rhoades-Shofner Const. Co., Dallas	1,902,461.87
Engineer's estimate	1,491,352.00

Items		Quantity	Unit Prices 1	2
Excav, common	cy	134,400	$0.40	$0.97
Excav, rock	cy	3,000	3.00	2.00
Topsoil, remov & stockpile	cy	10,400	.15	.60
Excav, borrow, for embank	cy	22,000	.37	.50
Compact embank	cy	42,500	.15	.15
Backfill	cy	46,700	1.25	.50
Compact backfill	cy	3,770	3.00	5.00
Farm water for zone 2 embank matl	Mgal	1,160	3.00	.25
Dry-rock pav	cy	7	13.00	12.00
Riprap	cy	61	14.00	8.00
grav bed under	cy	15	6.00	12.00
Graded sand & grav drains without sewer pipe	lf	3,245	.50	.75
w/ 4" swr pipe	lf	3,066	1.40	1.75
6" swr pipe w/ cmt joints	lf	850	1.20	.80
1 course surf	cy	850	4.00	2.00
42" conc pipe, rem	lf	28	5.00	10.00
69" conc pipe, break into	la		.100.00	125.00
cutting	ea	4	75.00	50.00
remov & salvag	lf	247	3.00	4.00
Concrete in res fl slabs, slope walls, col peds	cy	7,270	16.50	22.50
res roof slabs, cols, col caps, vert walls	cy	7,160	33.50	38.00
mon pipe, wyes, bends, anchors	cy	800	$50.00	$52.50
structures	cy	930	70.00	41.50
Cement	bbl	24,315	4.70	4.10
Reinf bars	lb	2,737,400	.11	.10
Rubber water stops, 6" plac	lf	12,673	.20	.20
9" plac	lf	876	.25	.30
Elas joint fill	sf	7,670	1.30	1.20
Dampprf walls	sy	105	1.00	.90
Insul, coal-tar-sat-felt roofing	sf	914	1.00	.50
Metal doors, mtl-sash windows, louvers for chlor house	la	2,500	2,000	
69" conc pipe sec, inst	lf	20	7.00	9.00
Concrete pipe 18" std-strg	lf	120	4.50	3.50
36" std-strg	lf	385	12.00	9.60
48" extr-strg	lf	3,430	21.50	22.50
Corg-mtl pipe arch	lf	55	7.00	4.75
Copper pipe	lf	870	1.30	1.35
Chain-link fence	lf	3,340	2.30	2.00
Sluice gate, hoist	lb	83,820	.50	.45
Mtl pipe, fit, vlv	lb	193,000	.13	.15
Res level recorder	lb	320	6.75	4.00
Flowmetr, venturi rings	lb	1,200	2.40	1.90
Spiral stairs, handrail	lb	2,750	.80	.50
Troly hoist, beam	lb	1,600	.70	.30
Frames, covs, gratg, ladder rungs	lb	19,440	.60	.30
Misc metalwork	lb	3,290	.70	.30
Elec sys	ls		9,766	9,000

Lining for California canal

Three California contractors, bidding on the concrete lining of about ¼-mile of Friant-Kern Canal, Central Valley Project, Calif, brought in a low bid of $124,245. This bid was midway between the engineer's estimate and the second low bid, 15% above the estimate and 15% below the next bid. It was 32.5% below the high bid. The Bureau of Reclamation opened the proposals Aug. 31, 1950.

This stretch of the canal has been used without lining for delivery of irrigation water. This work, including excavation of loose and "in place" materials inside the canal prism, about 15,000 square yards of reinforced concrete lining 3½ inches thick and about 8,700 linear feet of sand and gravel drains with and without sewer pipe, must be completed in 120 days under $50 penalty for each day over. The government is furnishing sand and gravel, paper sleeves for covering reinforced bars at contraction joints, flap valve units, and is constructing access ramps.

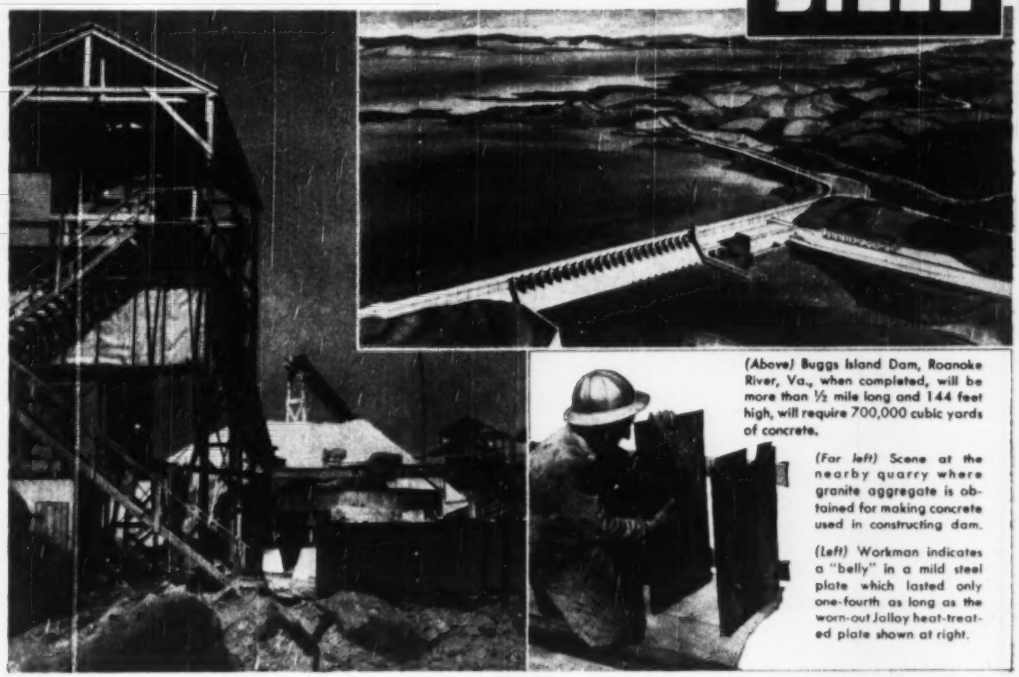
Wage rates prevailing are cement finishers, $2.20 an hour; mortar mixers, $2.00; power equipment operators, from $1.84 for apprentices to $2.59 for large shovels; unskilled laborers, $1.45. Bidders were:

1 Bent Const. Co., Los Angeles	$124,245.00
2 Munn & Perkins, Modesto	143,020.00
3 Peter Kiewit Sons' Co., Delano	164,580.30
Engineer's estimate	107,890.00

Items		Quantity	Unit prices 1	2
Excav for canal	cy	15,000	$0.75	$2.70
Prep fndn for lining	sy	14,700	2.00	1.20
Backfill	cy	250	3.50	3.00
Graded sand & grav dr Without sewer pipe	lf	5,000	1.50	2.00
with 6" sewer pipe	lf	3,700	2.50	3.00
Dr outlet boxes, furn matl & inst	ea	9	60.00	100.00
Conc in lining	cy	1,437	30.00	30.00
Cmt, furn & handl	bbl	2,080	6.00	5.00
Reinf bars, furn & pl	lb	80,000	12	10
1" elas fill in jts, f & pl	sf	70	1.50	5.00
Flap valv units for dr outlets, inst	ea	9	15.00	30.00

$12,500 SAVED in construction equipment maintenance with first 45 tons of Heat-treated JALLOY STEEL PLATE

J&L STEEL



(Above) Buggs Island Dam, Roanoke River, Va., when completed, will be more than ½ mile long and 144 feet high, will require 700,000 cubic yards of concrete.

(For left) Scene at the nearby quarry where granite aggregate is obtained for making concrete used in constructing dam.

(Left) Workman indicates a "belly" in a mild steel plate which lasted only one-fourth as long as the worn-out Jalloy heat-treated plate shown at right.

JALLOY Heat-Treated Plate lasts 4 to 5 times as long as mild steel in handling crushed stone for Buggs Island Dam

Buggs Island Dam, across the Roanoke River near South Hill, Va., is being constructed by Department of the Army, Corps of Engineers, Norfolk District. Granite is blasted from a quarry three miles from the dam site and crushed into various sizes. In moving and handling this hard abrasive rock, *worthwhile* savings are being made by using heat-treated JALLOY plate for: Chutes, screening equipment, truck bodies, shovel-dipper teeth and similar materials-handling applications.

At the quarry, operated by Ralph E. Mills and Gorman Bros., Inc., direct comparisons show that heat-treated JALLOY plate lasts an average of 5 times as long as mild steel. During the first 11 months, approximately 25 tons of JALLOY heat-treated plate were installed at the quarry.

At the dam, Jones-Tompkins-Wright, Contractors, installed approximately 20 tons of heat-treated JALLOY plate during the first 10 months of operations. Here JALLOY lasts on an average of 4 times as long as mild steel.

At both locations, approximately 45 tons of JALLOY heat-treated plate have effected a saving in the cost of steel for maintenance alone of more than $10,000. Labor savings in man-hours worked by maintenance crews have been conservatively estimated at more than $2,500.

Wherever heat-treated JALLOY plate is used to resist abrasion and impact, similar results are being obtained. Little wonder that this manganese moly steel is becoming so popular in materials-handling operations. Let us send you our booklet, "For Longer Wear . . . Less Repair." It describes how others are saving money with heat-treated JALLOY Steel Plate, The Mining and Quarrying Steel.

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CONSTRUCTION REPORTS

Bids Asked—Low Bidders—Contracts Awarded

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 18, N. Y.

ELSIE EAVES, Manager — *J. A. MAHONEY, Reports* — *M. R. ROESSLER, Statistics*

WATER SUPPLY

BIDS ASKED

Tex., Hallsville—B.A. 11/3—City, WW sys. imprvs., exten., $30,000. Allied Engineers, Inc., Fort Worth Natl. Bank Bldg., Fort Worth, engr.

LOW BIDDERS

Neb., Scribner—City, rejected bids Sept. 29, water treatment plant, $44,500. Will re-advertise. CD 9/19.

CONTRACTS AWARDED

Ala., Birmingham—Birmingham Waterworks Co., 2114 —1 Ave. N. filter bldg., concrete filters, etc., at Shades Mountain Station, to Rust Eng Co., Exchange Bldg., $127,380. Bids 9/25. CD 9/22.

N. C., Hudson—Town, WW imprvs., to J. C. Bledsoe, Blythewood, S. C., $74,710. Bids 9/27.

Tex., Houston—Hugh Wilkin, c/o Wilkin Lumber Co., 2302 Danville St., C.I. water lines, southwest sect. off Brays Bayou, to Frank Pfeiffer, 910 LaMonte St., $33,614. Edminster Eng. Co., 5410 Kirby Dr., consult. engr.

Que., St. Vincent de Paul—Municipality, WW to Poliquin & Marler, Drummondville, $40,000.

SEWERS, WASTE DISPOSAL

BIDS ASKED

N. Y., Oyster Bay—B.A. 10/24—Town Bd., Town Hall, refuse disposal plant for town of Oyster Bay in vicinity of Syosset. Plans deposit $25. Henry W. Taylor, 11 Park Pl., New York, Zone 7, consult. engr.

Md., Bowie—B. A. 10/26—State, Dpt. P. Imprvts., 506 Park Ave., Baltimore, Zone 1, sewage treatment plant, Bowie State Teachers College. Plans deposit $10. Bids 9/21 rejected, L. B. $110,822. Sandlass, Wieman & Assoc., 1021 N. Calvert St., Baltimore, Zone 2, design engrs., John B. Funk, 506 Park Ave., Baltimore, one 1. ch. engr. CD 10/3 under LB, Water Supply.

Pa., Norwood—B.A. 10/27—Norwood Boro, sewage pump. station, $50,000. Damon & Foster, Sharon Hill, engrs. CD 3/30.

Calif., Los Angeles—B. A. 10/31—Bd. Supervs. Los Angeles Co., 501 Hall of Records, sanitary sewers in Rowland Ave., Temple City, C.I. 4306, $129,400. C. E. Arnold, co. engr. CD 4/21/49.

Tex., Hallsville—B.A. 11/3—City, sanitary sewerage sys. $50,000. Allied Engineers, Inc., 1410 Fort Worth Natl. Bank Bldg., Fort Worth, engr.

LOW BIDDERS

Calif., Anaheim—Orange Co. Joint Outfall Sewer Dist., 204 Center St., furnishing 51,320 ft. 39- to 78-in. rein.-con. sewer pipe for Magnolia-Cannery Sewer, from American Pipe & Constr. Co., 4635 Firestone Blvd., South Gate, $877,023.

Calif., San Jose—Santa Clara Co. Sanitation Dist. 2, Court House, Oct. 2, sanitary sewers between San Antonio St. on Story Rd. and from McLaughlin Ave. to Bayshore Hy. and McKee Rd., from A. J. Peters & Son, 534 Stockton Ave., $131,909. CD 9/20.

▲ **Md., Baltimore**—City, Bureau Sewers, 312 Municipal Bldg., Zone 2, Oct. 4, Contr. 391, Sect. A, furnishing materials constr. brick, concrete, structural steel bldg. to house sludge drying equip., etc., from Chesapeake Contg., Inc., 1301 Towson St., Zone 1, $1,386,200; Sect. B, furnishing, driving approx. 9,000 lin. ft. cast in place piles, constr. radial brick stack approx. 350 ft. high and related work Back River Sewage Treatment Plant, from Custodis Constr. Co., 25 Broadway, New York, N. Y., $485,600. CD 9/20.

Miss., Rosedale—City, rejected bids Sept. 29, sanitary sewer imprvs., L.B. $199,000. Will re-advertise in 1951. CD 9/19.

N. Y., Long Beach—City, Oct. 2, sewage treatment plant, from Horn Constr. Co., Inc., 1776 Broadway, New York, Zone 19, $827,495. CD 9/8.

Texas—State Hy. Comm., Austin, cancelled bids to have been opened Oct. 17, 7 ft. and 5 ft. arch storm sewer in open cut U. S. 75, from point north of Normandy St. to point south of University Blvd. Control No. 47-7-20. FP No. U 515 (10) Dallas Co. CD 10/3.

Tex., Alamo Heights (San Antonio P.O.)—City, 6116 Broadway, San Antonio, Oct. 2, sanitary sewers from McKenzie Constr. Co., Box 806, San Antonio, $26,787, materials by owner, $25,000, total $51,287. Est. $55,000. CD 9/25.

Tex., Caldwell—City, Sept. 28, sanitary sewerage sys. imprvs., extens. from McKenzie Constr. Co., Box 806, San Antonio, $82,135. Est. $60,000. CD 9/11.

CONTRACTS AWARDED

Tex., Houston—Hugh Wilkin, c/o Wilkin Lumber Co., 2302 Danville St., storm and sanitary sewers, south west sect. off Brays Bayou, to English Constr., c/o owners, $61,215. Edminister Eng. Co., 5410 Kirby Dr., engr.

BRIDGES

BIDS ASKED

† **Wash., Richland**—B.A. 10/30—Atomic Energy Comn., Richland, 710 ft. rein.-con. bridge consisting of three 150- and two 110-ft. spans over Yakima River. $500,000. H. Hadley, Seaboard Bldg., Seattle, Zone 1, engr. CD 3/17.

LOW BIDDERS

▲ **Rhode Island**—Div. Purchases, at office Franklyn A. Adams, purch. agt., Smith St., Providence, Sept. 27, Olneyville bypass, which reroutes through traffic around Providence's second shopping center, R. I. Contr. 5019, R. I. FAP No. U-UG-F143 (1), Providence Co., from M. A. Gammino Constr. Co., 728 Valley St., Providence, $1,789,383. CD 9/6.

Virginia—State Hy. Dpt., Richmond, rejected bids Sept. 20, wid'n Belt Line bridge to 4-lanes on Cary St. Rd. Route 147, city of Richmond, LB $68,361; 607 ft. bridge over Jackson River at Island Ford with approach to for a 4-lane divided crossing, U.S. 60, Alleghany Co., L.B. $505,908. CD 9/22, under LB.

†**Washington**—Bureau Public Rds., Dpt. Commerce, Morgan Bldg., Portland, Ore., rein.-con. bridge and viaducts on 0.023 mi. Stevens Canyon Hy., Mt. Rainier National Park, Proj. 4-C2, Lewis Co., from T. N. Buchanan Co., Inc., 835 W. 48 St., Seattle, $125,765 CD 9/22.

CONTRACTS AWARDED

▲†**Tennessee**—Tennessee Valley Auth., Chattanooga construct highway bridge across Chickamauga Dam over Tennessee River, near Chattanooga, to American Bridge Co., Union Trust Bldg., Cincinnati, O. $3,352,100. In addn. to the contract just awarded, the bridge will also involve addnl. work by TVA forces to estimated extent of $625,000. CD 9/8, under LB.

STREETS AND ROADS

BIDS ASKED

Tex., Galena Park—B.A. 10/31—City, asph. paving portion Main and 18 Sts. $97,000. C. Davis, city engr., CD 6/19.

Kentucky—State Hy. Dpt., Frankfurt, rejected bids Sept. 15, traffic bound limestone surf. 5.776 mi. Greenville-Russellville Rd., Proj. RS 89-643, Muhlenberg Co., L.B. $101,732. CD 9/26, under L.B.

▲ **Louisiana**—State Rds. Dpt., Baton Rouge, Oct. 4, grading, small drainage structures, rein.-con. deck girder bridges, c. conc. pavement 6.039 mi., Sabine River-Starks Hy., State Rte. 7, Proj. 12-02-10, F. A. Proj. F 389 (2) and F 389 (3), Calcasieu Parish, from Cook Constr. Co., Hy. 80 W., Jackson, Miss., $1,340,293. CD 8/31.

▲ **Rhode Island**—Div. Purchases, State Purch. Agt., State House, Smith St., Providence, c. conc. 46 ft. wide divided section 2.655 mi. Louisquisset Pike from North of Cobble Hill Rd. to north of Sherman Ave., Lincoln, R. I. Contr. 5002-, F.A.AP. F-17 (9), Providence Co., from M. A. Gammino Constr. Co., 728 Valley St., Providence, $1,230,726. CD 8/29.

Texas—State Hy. Comm., Austin, cancelled bids to have been opened Oct. 17, grading, surf. 0.256 mi. Hy. U. S. 75, from Paris St. to Beaumont via Pearl in Dallas, Control No. C 92-1-9, Dallas Co., CD 10/31; flexible base, one course surf. tr. 3.849 mi. Hy. F.M. 1430 from U. S. 83 at Garcias, Control No. RV 96-13-1, Starr Co. CD 10/5.

Texas—State Hy. Comm., Austin, cancelled bids to have been opened Oct. 18, grading, storm sewers, c.conc. 0.411 mi. Hy. U. S. 74 from point north of McComas Ave. to point north of Mockingbird Lane, in Dallas, Contr. No. 47-7-23 and 26, FP No. UG 515 (9) and U 515 (14), Dallas Co.; grading, storm sewers, flexible base, asph. surf., c.conc. pavement bridge, traffic control signals, etc. 2.32 mi. Hy State 225 from Proposed U. S. Hy. 75 to existing State Hy. 225 in Houston, Control No. 502-1-13, FP No. U 1081 (4), Harris Co. CD 10/3.

Virginia—State Hy. Dpt., Richmond, rejected bids Sept. 20, hard surf. 4.66 mi. Goochland Co. Secondary Route 600 between Three Square and Route 6, L.B. $59,508; paving 7.38 mi. Secondary Route 734 between Aldie and Airmont, Loudoun Co., L.B. $94,610. CD 9/25, under L.B.

CONTRACTS AWARDED

La., Cameron—Cameron Parish Police Jury, 8.2 mi. road imprvs., to Sam Carline, Inc., Berwick, $75,569. Bids 8/26. CD 9/7.

Kansas—State Hy. Comm., Kansas City, pavement and asph. surf. course 4.005 mi., Proj. 24-105 K 1041 (2), Wyandotte Co., to Reno Constr. Co., Overland Park, $126,887. CD 9/20.

Minnesota—State Hy. Dpt., St. Paul, grading, paving, bridge 0.1 mi. on E. Franklin Ave. between 18 and Snelling Aves. S. in Minneapolis, Hennepin Co., to W. D. Giertsen Co., 900 Glenwood Ave., Minneapolis, $679,272. Bids 9/15. CD 9/20.

† **Oregon**—Bureau Pub. Roads, Dpt. Commerce, Morgan Bldg., Portland, grading 2.9 mi., surf. and bit. surf. Canyonville sect. of Oregon Pacific Hy., Douglass Co. to Carl M. Halvorson, Builders Exchange Bldg., Portland, $800,251. Bids 9/27.

▲ **Rhode Island**—Div. Purchases, State Purch. Agt., State House, Smith St., Providence, c. conc. base course with crack control 0.65 mi. 44 ft., 48 ft. variable width, 1 span steel stringer with concrete deck and stone faced abutments on wood piles bridge Gaspee St. and Pershing Sq. Rotary Reconstruction incl. bridge and parking area, Providence Contr. 5008, F.A.P. F-148 (2), and c. conc. with crack control and c. conc. on existing pavement with 60 ft. width divided section 2.88 mi. Reservoir Ave. and New London Pike from Park Ave. to Brayton Ave., Cranston, Contr. 5016, F.A.P. No. FI-37 (8) and FI-50 (2), Providence Co., to Campanella & Sons Constr. Co., 780 Jefferson Blvd., Warwick, $1,300,000. Bids 9/6. CD 8/29.

Tex., Houston—Hugh Wilkin, c/o Wilkin Lumber Co., 2302 Danville St., street constr., asph. paving, southwest sect. off Brays Bayou, to Vernon Miller, 2015 McClendon St., $56,665. Edminister Eng. Co., 5410 Kirby Dr., engr.

EARTHWORK, WATERWAYS

BIDS ASKED

† **Virginia**—B.A. 10/24—U. S. Eng., foot of Front St., Norfolk, construct Wing and Saddle Dikes, Buggs Island Reservoir Proj., on right and left banks of Roanoke River, adjacent to concrete dam and approx. 20 mi. by river downstream from Clarksville and approx. 16 mi. southwest of South Hill. Plans deposit $20. CD 8/3/44.

Wisconsin—B.A. 10/24—State Hy. Comm., State Office Bldg., Madison, Contr. 1, retaining wall, The Waldo-Sheboygan Rd., S. T. Hy. 28, Proj. T 070-1 (1), Sheboygan Co.

† **Colorado**—B.A. 10/25—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., grouting temporary outlets, Spring Canyon and Dixon Canyon Dams, Colorado-Big Thompson Proj., southwest of Fort Collins, approx. 7 and 5 mi. respectively. Spec. DC-5207. L. N. McClellan, ch. engr.

† **Tennessee**—B.A. 10/25—U. S. Eng., P. O. Box 97, Memphis, Zone 1, embankment, ditch excav., culvert installation, timber bridge along left bank of the Mississippi River, in Tennessee, Dyer Co., Serial No. CIVENG 40-041-51-38.

(Continued on page 78)

PROJECTS COVERED

Projects—By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $28,000; other public works $50,000; industrial buildings $68,000; other buildings $250,000.

Classes of Construction

(Name in order of Listing)

Water Supply	Latin America
Sewers, Waste Disposal	Public Buildings
Bridges	Commercial Buildings
Streets & Roads	Industrial Buildings
Earthwork, Waterways	Unclassified

Stages Reported

PROPOSED WORK: Including appointment of engineers or architects.

BIDS ASKED (new announcements only). For full calendar, see also preceding issues of ENR.

LOW BIDDERS: On jobs below $500,000 value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: Except awards to low bidders previously reported in low bidder stage.

Dates shown are of issue in which last previous report was published.

Symbols and Abbreviations Include:

†	Federal Government
▲	Project of $1,000,000 or over.
B.A.	Bids Asked
ENR	Engineering News-Record
CD	Engineering News-Record Construction Daily

Welded Design Cuts Structural Cost 32%

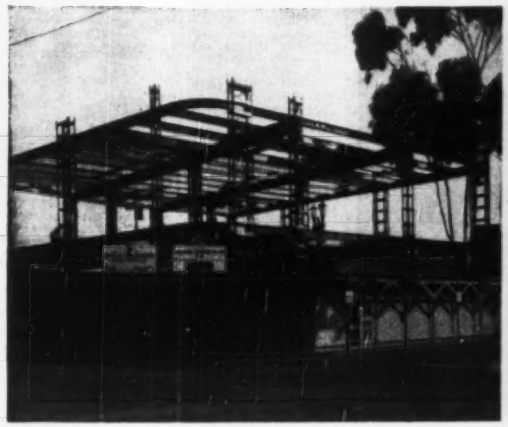

Fig. 1. *All welded (112 ton) framework for the Associated Telephone Company Building, Laguna Beach, California.*

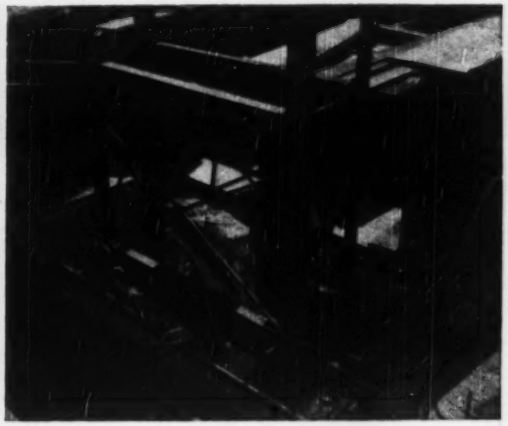

Fig. 2. *Open box column construction fabricated at low cost from plain angles, plate and bars.*

By **Maurice Sasso**, Consulting Engineer
Los Angeles, California

ARC welding provides the engineer new freedom in design for developing structural members impossible by any other method. It enables him to use structural materials more efficiently, to design stronger, yet lighter buildings that can be erected at lower cost.

In the construction of the Associated Telephone Company Building, Laguna Beach, California, open box column design has effected a saving of 32%. The saving of welded construction over riveted design amounts to $7,954 and includes the elimination of 27 tons of structural steel and a reduction in building height of 1'6".

All open box column members, (Fig. 2) as well as beams and girders, were shop fabricated at low cost with fast, downhand welding methods. Field erection was completed in only 26 hours with a crew of 6 men. Both shop and field welding were done with Lincoln "Fleetweld 5" electrode and "Shield-Arc" welders. Welding also made it possible to erect the addition without disturbing delicate instrument settings in the telephone exchange itself.

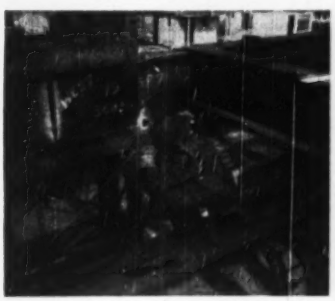

Fig. 3. *Arc welding girder-to-column. This is the only weld where a scaffold was used.*

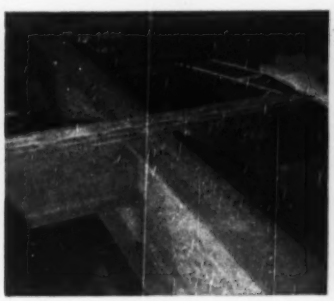

Fig. 4. *Welding beam-to-girder. Full continuity increases resistance to bending and shear.*

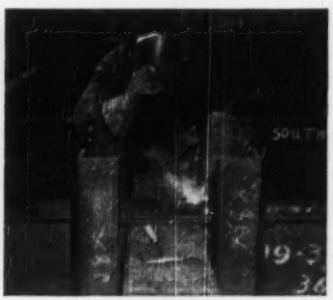

Fig. 5. *Beam and girder connection made through open box column permits easy downhand welding.*

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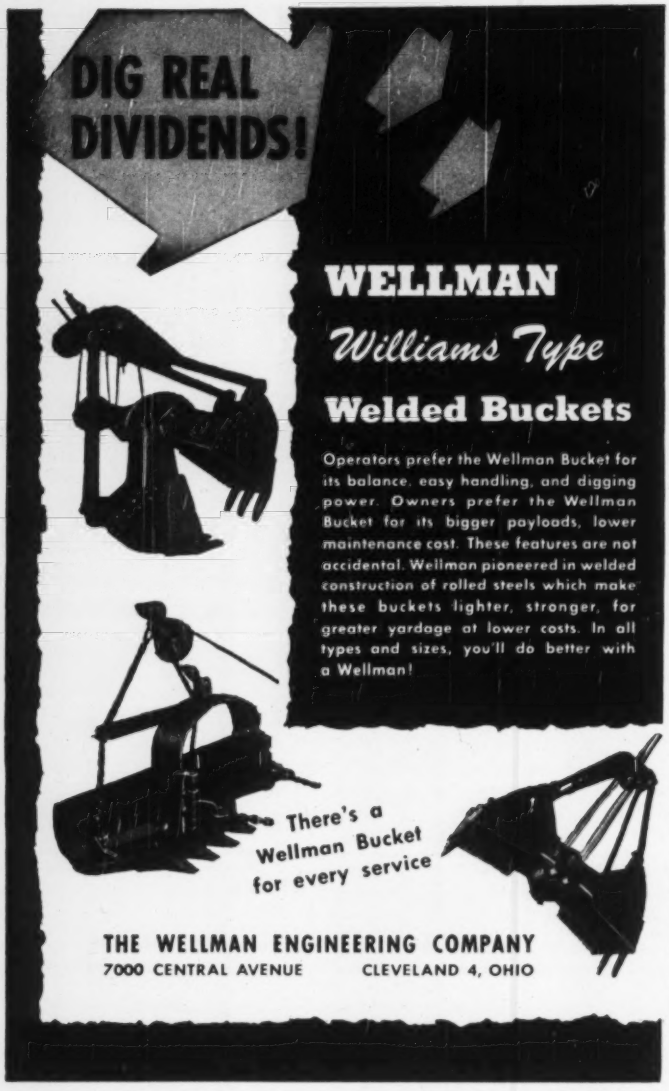
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(Continued from page 76)

† Virginia—B. A. 10/25—U. S. Eng., foot of Front St., Norfolk, repairing Lock Gates, Atlantic Intracoastal Waterway, Great Bridge, Norfolk Co., Inv. Serial No. CIVENG 44-110-51-12.

† Maryland—B.A. 10/26—U. S. Eng., First and Douglas Sts. N. W., Wash. 25, D. C., reservoir area clearing Savage River Dam, Garrett Co., CIVENG 49-080-51-24. Bid date changed. CD 10/4.

† Washington—B.A. 10/26—Bureau Reclamation, Dpt. Interior, Ephrata, clearing Long Lake reservoir site, Columbia Basin Proj., near Ephrata, Spec. R1-CB-84, (Region 1), L. N. McLellan, Bldg. 1-A, Denver Federal Center, Denver, Colo., ch. engr.

† Wisconsin—B.A. 10/26—U. S. Eng., 1217 U. S. Post Office and Sutom House, St. Paul 1, Minn., removal fill at upstream end of Esplanade Lock & Dam 8, Mississippi River, immediately downstream from Geona, DC 6/9/44.

† Maryland—B.A. 10/28—U. S. Eng., First and Douglas Sts. N. W., Wash. 25, D. C., reservoir area clearing for Savage River Dam, Savage River, Garrett Co., CIVENG 49-080-51-24.

▲† Tex., Roma—B.A. 10/30—International Boundary & Water Comn., U. S. A. and Mexico, 1st Natl. Bank Bldg., El Paso, earth-rolled type, 152 ft. above river bed, 19,000 lin. ft. long, Falcon Dam, near here, $30,000,000. Plans deposit $100; electric power plant, $15,000,000. Plans deposit $50. Extended date. Richard B. Ward, c/o owners' engr. CD 9/26.

† Kentucky—B.A. 10/31—U. S. Eng., 830 W. Broadway, Louisville, Zone 3, trial erection steel, aluminum structural members and panels for movable closure parts at existing closure structures in Louisville Flood Protection Works, erected at 43 separate locations, Sect. A, part 1 and Sect B. C. and D, also storing movable closure parts in storage vaults, CIVENG 15-029-51-29.

† North Dakota—B.A. 10/31—U. S. Eng., Fort Lincoln, Box 300, Bismarck, intake, structure service bridge, Garrison Dam and Reservoir, Riverdale, Serial No. CIVENG 32-015-51-18. CD 6/1/44.

† Wyoming—B.A. 10/31—Bureau Reclamation, Dpt. Interior, Casper, repairing of Lingle Wasteway, North Platte Proj. Spec. R7-: 54 (region 7), L. N. McClellan, Bldg. 1-A, Denver Federal Center, Denver, Colo., ch. engr.

▲† Washington—B.A. 11/9—U. S. Eng., 4735 E. Marginal Way, Seattle, Zone 4, constr. Chief Joseph Dam across Columbia River, Bridgeport, Serial No. CIVENG-48-108-51-12, $30,000,000. Extended date. CD 8/29.

LOW BIDDERS

† Florida—U. S. Eng., P.O. Box 1169, Mobile 7, Ala., rejected bids Aug. 18, dredging 3 sections Gulf Intracoastal Waterway, CIVENG-01-076-51-10.

▲† Georgia and South Carolina—U. S. Eng., Post Office Bldg., Savannah, Ga., Oct. 5, constr. Clark Hill Powerhouse and appurtenant works, Clark Hill Proj., Savannah River Basin, Savannah River, Serial No. CIVENG-09 133-51-2, from J. W. Bateson Co. Inc., Irwin-Keasler Bldg., Dallas, Tex., and Stolte, Inc., 8451 San Leandro St., Oakland, Calif., $7,079,790. CD 7/25.

† Illinois—U. S. Eng., 808 U. S. Court House & Custom House, St. Louis 1, Mo., rejected bids Sept. 8, levees, Proj. Item III-D, CIVENG-23-065-51-6, Jackson Co.

CONTRACTS AWARDED

† South Dakota—U. S. Eng., 1709 Jackson St., Omaha, Neb., intake gate hoists for the intake structure at Fort Randall Dam, CIVENG 25-066-50-200 to Goslin Birmingham Mfg. Co. Inc., P.O. Box 631, Birmingham 1, Ala., $766,858. Bids 8/16, awarded 9/13. CD 8/29, under LB.

AIRPORTS

BIDS ASKED

† Tex., Dallas—CONTROL TOWER—B.A. 10/31—U. S. Govt., Navy Dpt., Naval Station, W. B. Howard, Cpt. (CEC) USN, New Orleans, La., steel control tower on concrete and pipe fdn., corr. asb. siding, structural steel, control room, earthwork, etc., Hensley Airfield. Approx. $60,000. Plans deposit $10.

LOW BIDDERS

† Alaska—UTILITIES—U. S. Eng. (APO 942, c/o PM, Seattle, Wash.) Anchorage, Oct. 3, outside utilities, Elelson Air Force Base, Inv. No. S95-507-51-3, from Southern Constructors, Fairbanks, $583,987. Est. $762,854.

† Alaska—SEWERS—U. S. Eng. (APO 942, c/o PM, Seattle, Wash.) Anchorage, Oct. 5, sanitary sewers in Air Depot area at Elmendorf Air Force Base, Inv. No. S95-507-51-7, from Urban Plumbing & Heating Co. of Washington, 103 S. 28 St., Tacoma, Wash., $189,799. Est. $313,093. CD 8/31.

CONTRACTS AWARDED

† Calif., San Diego—RUNWAYS, etc.—U. S. Navy, San Diego, cleaning, resealing joints in runways and taxiways Spec. 25169, to James M. Pope, 2565 Santa Fe Ave., Long Beach, $55,127. Bids 9/21.

S. C., Greenville—AIRPORT—City, Item 2, airport imprvs. to Sloan Constr. Co., Inc., Peoples Natl. Bank Bldg., $192,658. Bids 9/19. CD 9/8.

† S. D., Rapid City—REFUELING SYSTEM—U. S. Eng., 1709 Jackson St., Omaha, Neb., aircraft refueling sys. at Rapid City Air Force Base, Weaver, ENG 25-066-51-9, to Long Constr. Co., 810 Rialto Bldg., Kansas City, Mo. $569,900. Awarded 9/12.

PUBLIC BUILDINGS

BIDS ASKED

Conn., Southbury—HOUSING—B.A. 10/23—Controllers Office, Hartford, personnel housing unit at Southbury Training School. $291,000. VD 8/23.

N. J., Florence—SCHOOL—B.A. 10/23—Florence Twp., Bd. Educ., Florence, Senior High School, Cedar and Pine Sts. $700,000. Extended date. Mickiewright & Mountford, 72 Ewing St., Trenton, archts. CD 9/1.

N. J., West New York—HOUSING—B.A. 10/23—Housing Auth., 449 60 St., Palisade Gardens Housing Proj. N. J. 30-1, incl. 25 units, 59 St., between Palisades and Bergenline Aves., $350,000. CD 7/21.

† **Ala., Gadsden**—CLASSROOMS—B.A. 10/24—Yards & Docks Annex, Navy Dpt., Arlington, Va., addnl. classrooms at Naval Reserve Training Center, N2Y 20762, Spec. 24125. Plans deposit $5.

Md., Oakland—SCHOOL—B.A. 10/24—Bd. Educ., Court House, 2 story, concrete block, steel Oakland Junior Senior High School and North Region Junior Senior High School in Oakland and The Cove, $350,000. Plans deposit $100. Edw. H. Glidden Jr., Equitable Bldg., Baltimore, archt. CD 10/4, under LB.

Mass., Holyoke—SCHOOL—B.A. 10/24—City, Bd. P. Wks., City Hall, brick, steel, concrete Highland Junior High School. $600,000. Plans deposit $50. Kilham Hopkins, Greely & Brody, 126 Newbury St., Boston archts. CD 9/25.

▲ **Minn., St. Paul**—HOUSING—B.A. 10/24—St. Paul Housing & Development Auth., I. Karon, exec. dir., E. 702 First National Bank Bldg., 68 two story, bsmnt. bldgs., Maryland and Hazelwood Aves. $2,500,000. W. M. Ingemann, M. V. Bergstedt & W. B. Cavin Jr., 345 Minnesota St., archts. CD 11/3/49.

N. Y., Brooklyn—HOUSING IMPRVS.—B.A. 10/24—New York City Housing Auth., 63 Park Row, New York, Zone 7, street and yard imprvs. for Farragut Houses (NYS-20) comprising Sect. I, in area bounded by York, Navy, Sand, Gold and Bridge Sts. Plans deposit $25.

N. Y., New York—SCHOOL—10/24—Supt. School Buildings, Design and Constr., 49 Flatbush Ave. extn., Brooklyn, Zone 1, general contract; plumbing and drainage; heating and ventilating; electrical work and lighting fixtures for Morris High School addn., E. 166 St. between Boston Rd. and Jackson Ave. Plans deposit $10 general contract, $6 each others.

N. Y., Port Jefferson—HIGH SCHOOL—B. A. 10/24—Bd. Educ., Union Free School Dist. 6, **Port Jefferson,** high school addn. $270,000. Daniel Perry, 1213 Main St., archt.

Ore., Portland—GYMNASIUM, etc.—B.A. 10/24—School Dist. 1, 631 N. E. Clackamas St., rein.-con. gymnasium and 8-room addn. to Roosevelt High School. Plans deposit $50. Jones & Marsh, Concord Bldg., archts. CD 6/1/44.

S. C., Greer—HOSPITAL—B.A. 10/24—City, hospital. J. E. Sirrine & Co., Main St., Columbia, archt. CD 11/11/46.

† **Va., Fort Lee**—BARRACKS—B.A. 10/24—U. S. Eng., First and Douglas Sts., N. W., Wash., 25, D. C., 225 man barracks bldg., Serial No. ENG 49-080-51-22(22). Extended date. CD 9/18.

La., Marrero—SCHOOL—B.A. 10/25—Jefferson Parish School Bd., 519 Huey P. Long Ave., Gretna, Walkertown Colored Public Elementary and High School, Ward 4. Plans deposit $30. Sporl & Maxwell, 401 Vincent Bldg., New Orleans, archts.

Minn., Blue Earth—POWER PLANT—B.A. 10/25—City, Bd. P. Wks., J. J. Kelv, secy., furnish, erect 50,000 lb. per hr. boiler and auxiliaries in municipal power plant. $68,000. Plans deposit $25. Helmick, Edeskuty & Lutz, 405 Essex Bldg., Minneapolis, engrs.

Mo., Marshall—SCHOOL—B.A. 10/25—Reorganized Dist. R 10, Saline Co., Bd. Educ., Archie E. Lawless, secy., Napton, brick, rein.-conc. school, incl. plumbing, pump house equip., etc. Plans deposit $20. Dave P. Clark, 302 Miller Bldg., Columbia, archt.

N. Y., Brooklyn—SCHOOL—B.A. 10/25—Supt. School Buildings, Design and Constr. 49 Flatbush Ave. extn., Zone 1, general contract; plumbing and drainage; heating and ventilating; electrical work and lighting fixtures for P. S. 269, east side of Nostrand Ave. between Farragut Rd. and Foster Ave. Plans deposit $9 general contract; $6 each others. CD 1/17.

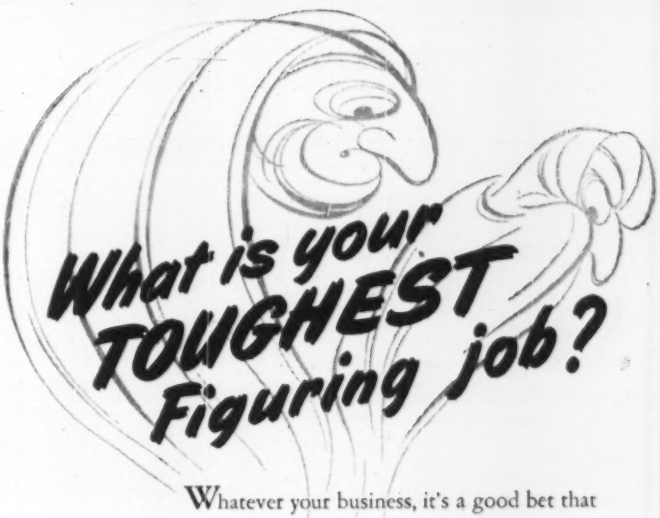
N. Y., Flushing—HOUSING—B.A. 10/25—New York City Housing Auth., 63 Park Row, New York, Zone 7, heating and ventilating for Pomonok Houses (Proj. No. NYC 22) in area bounded generally by 71 Ave., Kissena Blvd., 65 Ave. and Parsons Blvd. Plans deposit $75.

N. C., Charlotte—SCHOOL—B.A. 10/25—Bd. School Comrs., J. M. Dunlap, bus. mgr., City Hall, Elizabeth School addn. Biberstein & Bowles, Inc., 1600 Elizabeth Ave., archts. CD 9/21.

Tenn., Clinton—HIGH SCHOOL—B.A. 10/25—Anderson Co., Clinton, high school. Plans deposit $100. Approx. $250,000. Barber & McMurry, 2505 Kingston Pike, S. W., Knoxville, archts. CD 3/17/49.

N. B., St. John—HOSPITAL, etc.—B.A. 10/25—Acting Secy. Dpt. P. Wks., Hunter bldg., Ottawa, Ont., Phase No. 2 Lancaster hospital addn., alterations. Approx. $750,000. Plans deposit $200. G. Brault, c/o owner, archt. CD 9/20.

Fla., Jacksonville—SUBSTATIONS—B.A. 10/26—City, City Hall, three 3000 kva sub-stations complete with



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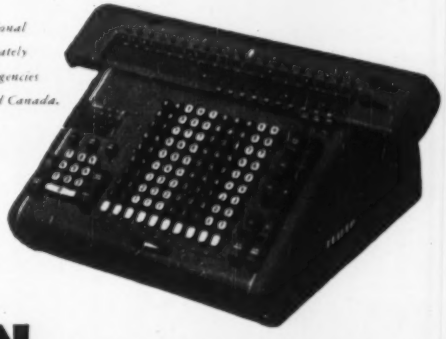

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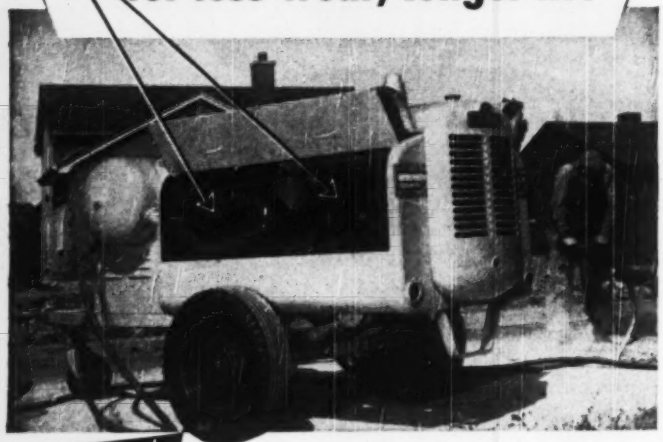

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feeder cables for outgoing service for West Beaver St., Lake Shore and Venetia. Reynolds, Smith & Hills, 227 Park St., Zone 1, engrs. CD 2/12/47

Ga., Rome — HOUSING — B.A. 10/26 — Home Housing Auth., c/o Poundstone, Ayers & Godwin, archts., Bona Allen Bldg., Atlanta. Projs. GA 5-3 and GA 5-4, incl. 200 housing units, 2 administration bldgs. Bids 9/26 rejected. CD 9/8.

Massachusetts—GARAGES—B.A. 10/26—Commonwealth of Mass., Dpt. P. Wks., Boston, cement concrete block garages, 1 each at Dalton and Rowley. Plans deposit $10 each. P. H. Kitfield, ch. engr.

Mass., Milton—SCHOOL—B.A. 10/26—Town of Milton, School Bldg. Comn., E. E. Erickson, chn., brick, steel, concrete school, off Canton Ave. $925,000. Plans depcsit $20. Adden, Parker, Clinch & Crimp, 177 State St., Boston, archts. Gilbert Small & Co., Inc., 10 State St., Boston, engr. CD 10/28/49.

Minn., Mankato—SCHOOL—B.A. 10/26—State, Dpt. Admin., P. T. Peterson, dir. Purchases, State Capitol, classroom bldg. at State Teachers College, $756,000. Plans deposit $25, McEnary & Krafft, 1110 McKnight Bldg., Minneapolis, archts.

N. H., Hillsboro—SCHOOL—B. A. 10/26—Town School Bd., brick, steel, concrete Hillsboro School. $300,000. Perly F. Gilbert & Assoc., Inc., 53 Central St., Lowell, Mass., engr. and archt.

N. C., Winston-Salem—SCHOOL—B.A. 10/26—City, J. W. Moore, secy., City Hall, N. Main St., school. Plans deposit $50 general constr. or mech. work. Macklin & Stimson, 226 N. Trade St., archts.

O., Dayton—SCHOOL—B. A. 10/26—Bd. Educ., Van Buren Twp., Chester A. Moyer, pres., Dayton, 20-classroom school. $577,000. CD 11/25/49.

† Va., Warrenton—FAMILY QUARTERS—B.A. 10/26—U. S. Eng., First and Douglas Sts. N. W., Wash. 25, D. C., family quarters at Vint Hills Farms Station, ENG 49-080-51-16-(16).

Ky., Lexington—OFFICE—B.A. 10/27—State Hy. Dpt., Frankfort, office on state property located north of New Belt Line Hy. just east of Newton Rd., for Sixth Dist., Ky. State Hy. Dpt., near here. Proj. SD 34-761-A, Fayette Co. Plans deposit $25. Frankel & Curtis, 510 Central Bank Bldg., Zone 15, archts. and engrs.

N. J., Union City—HOUSING—B.A. 10/27—Housing Auth., 360 Bergenline Ave., Union City, Columbian Court Housing Proj. N. J-26-1, on 3 and 4 Sts. between Bergenline Ave. and West St. $960,000. CD 10/18/49.

†N. Y., Elmira — POST OFFICE — B.A. 10/27—Pub. Bldgs. Service, 250 Hudson St., New York, Zone 13, misc. repairs at U. S. Post Office and Custom House.

Ont., London—TEST—B.A. 10/27—J. D. McCarthy, secy., Canadian Commercial Corp., 70 Lyon St., Ottawa engine run-in and test bldg. at No. 204 Base Workshop Highbury Ave. Tender No. G-39-3A-61. Approx. $75,000. Plans deposit $25.

N. Y., Elizabethtown — SCHOOL — B.A. 10/28 — Bd. Educ., Central School Dist. 1, Elizabethtown, high and elementary school. $325,000. Extended date. Sargent, Webster, Crenshaw & Folley, Erie Bldg., Syracuse, archts. CD 9/25.

O., Norton Center—HIGH SCHOOL—B. A. 10/28—Bd. Educ., Norton Local School Dist., T. J. Wehling, clk., Norton Center, Senior High School. Plans deposit $20. W. B. Huff, 1050 N. Main St., Akron, Zone 10, archt. CD 10/20/49.

Calif., Daly City—WAR MEMORIAL, etc.—B.A. 10/30—City, City Hall, war memorial and recreation center. Approx. $250,000. Plans deposit $20. Mario Ciampi, 425 Bush St., San Francisco, archt. CD 9/13, under LB.

▲Conn., Bridgeport—SCHOOL—B.A. 10/30—Controllers Office, State Capitol, Hartford. Bullard Havens Technical School, $1,800,000. CD 4/27.

†Alaska, Fort Richardson—WAREHOUSE—B.A. 11/2—U. S. Eng., (APO 942, c/o PM, Seattle, Wash.) Anchorage, two 200x1,000 ft. permanent storage warehouses, Nos. 6005 and 6010, in General Depot Area, Inv. No. S95-507-51-5. Plans deposit $50.

LOW BIDDERS

▲ Ark., Little Rock—HOUSING—Little Rock Housing Auth., 313 Commercial National Bank, rejected bids Sept. 28, 400-unit housing, L.B. $4,155,120. CD 8/31. Will re-advertise.

▲ Calif., Los Angeles—SUPERIOR COURTS—Bd. Supervs. Los Angeles Co., 501 Hall of Records, rejected bids Sept. 26, general contract, superior courts bldg., L.B. $11,082,765; heating, ventilating, air conditioning work, L.B. $1,597,970; electrical work, L.B. $1,237,319; elevator work and electric stairways, L.B. $632,617. CD 9/29, under LB.

▲ Fla., Orlando—HOMES—Orlando Housing Auth., Orlando, Sept. 28, Lake Mann Homes, from J. Hilbert Sapp, West Palm Beach, $1,694,990.

La., Alexandria—GYMNASIUM—Rapides Parish School Bd., gymnasium at Bolton High School, from R. J. Jones & Sons, P. O. Box 991, $362,096.

Mass., Carver—SCHOOL—Town, School Comn., Town Hall, Main St., Sept. 29, 2 story, brick consolidated school, from J. F. Rand & Son, 57 Sudbury St., Boston, $281,863. CD 9/13.

Mass., Somerset—SCHOOL—Town, School Dpt., Sept. 29, 1 story, 63x270 ft., brick, steel concrete school, Read St., from Eisenberg Marden Corp., 755 Boylston St., Boston, $313,000. CD 9/22.

▲ R. I., Providence—LIBRARY—City, City Hall, rejected bids Sept. 25, Central Public Library addn., Washington St. L. B. $2,143,892. Will re-advertise. CD 10/2.

Tenn., Knoxville—BUSINESS ADMINISTRATION—University of Tennessee, Knoxville, Sept. 28, business admin. bldg., from Foster & Creighton Co., American Natl. Bank Bldg., Nashville, $827,280. CD 9/5.

▲ **Va., Richmond**—SCHOOLS—City School Bd., 312 N. 9 St., Sept. 25, Franklin School addns., alterations from C. E. Nuckols, 1103 E. Main St., $267,000; Mary Munford School, Westmoreland St. and Grove Ave. and Summer Hill School addn. from Thorington Constr. Co., 205 E. Canal St., $875,000 and $286,000 respectively. CD 9/1.

CONTRACTS AWARDED

† **Ala., Camp Rucker**—MILITARY BUILDINGS—U. S. Eng., P. O. Box 1169, Mobile, 7, Ala., repairing various military buildings, to Cowan Lumber & Planing Mills, 1419 Clinton St., Nashville, Tenn., $303,170.

Ga., Athens—MILLEDGE ANNEX—Bd. Regents University System of Georgia, 20 Ivy St. S.E., Atlanta, addns., alterations Milledge Annex-Clark Howell dormitories at University of Georgia, to J. A. Jones Constr. Co., Walton Bldg., Atlanta, $534,628. Bids 8/31. CD 9/7.

Ga., Athens—HIGH SCHOOL—City Bd. Educ., Athens, high school, to Stillwell Constr. Co., Bankers Insurance Bldg., Macon, $765,080. Bids 9/27, awarded 10/3. CD 10/2.

Okla., Tahlequah—AUDITORIUM, etc.—Bd. of Affairs, Capitol, Oklahoma City, auditorium and fine arts bldg. at Northeastern State College, to Burtan-Miller Co., Ardmore, $345,907, est. $325,000. Bids 9/25. Hudgins, Thompson-Ball & Assoc., 1100½ W. Main St., Oklahoma City, archts.

Pa., Phila.—KITCHEN, etc.—General State Auth., 18 and Herr Sts., Harrisburg, general contract renovating male kitchen and cafeteria at Phila. (Byberry) State Hospital, to Ward & Co., 1920 Sansom St., $782,000. Bids 9/27. CD 10/2, under LB.

Pa., Torrance—TUBERCULAR PATIENTS—General State Auth., 18 and Herr Sts., Harrisburg, general contract tubercular patients bldg. at Torrance State Hospital, to L. D. Building Co., P. O. Box 472, Latrobe, $813,640. Bids 9/20. CD 9/25, under LB.

▲ **Alta., Edmonton**—HOTEL SUPERSTRUCTURE—Canadian National Rys., 355 McGill St., Montreal 1, Que., 300 room Macdonald Hotel superstructure, 100 St., to Poole Constr. Co. Ltd., 10503 109 St. Approx. $4,500,000. Bids 9/8. CD 8/8, under Commercial Bldgs.

COMMERCIAL BUILDINGS

BIDS ASKED

Tex., Lubbock—HOSPITAL—Bids Asked—West Texas Hospital, Lubbock, brick, stone hospital addn., concrete pier and beam fdn. $450,000. Atcheson & Atkinson, Sanford Bldg., archts.

SOON LETS CONTRACT

Ga., Albany—CHURCH—First Methodist Church, c/o Dennis & Dennis, Richard V. Richard, assoc. archts., Box 891, Albany, soon lets contract church.

LOW BIDDERS

Tex., Houston—CHURCH—Christ Episcopal Church, Texas Ave. at Fannin St., 2 story, steel, brick Gothic type church, from American Constr. Co., 410 Rusk Bldg., $506,119. Est. $500,000. CD 8/2.

CONTRACTS AWARDED

Calif., San Lorenzo—RESIDENCES—Golden Gate Homes, Inc., 101 Bockman Rd., 40 residences, Vit Linda Vista, Via Lucas, Via Chiquita, Via El Monte. Owner builds. $280,000.

Fla., North Miami—HOMES—United Housing Corp., 11900 N. Miami Ave., 75 homes, Overbrook Shores area. Owner builds. Approx. $650,000.

Fla., Tampa—RESIDENTIAL DEVELOPMENT—Sunset Park Homes, c/o J. C. Wolfe, 307 Columbia Dr., Tamina, several residential developments. Owner builds. Approx. $500,000.

Ga., East Point—HOMES—Pine Knoll Homes, 612 Dorsey Ave., 28 homes, Perkerson Rd. Owner builds. $250,000.

Ill., Park Ridge—APARTMENT—Greenwood Court, c/o A. L. Levy archt., 179 W. Washington St., Chicago, masonry contract, 3 story, 60 unit brick, stone apartment, to Philip Miller, 1622 N. California St., Chicago***heating to Advance Heating & Air Conditioning Co., 117 N. Desplaines St.***carpentry, to Albin Polterman, 2415 Fletcher St.***plumbing, to M. W. Goldstein, 3735 Fullerton St. Approx. $575,000.

Ind., South Bend—SCIENCE—Notre Dame University, Rev. Theodore M. Hasburg, exec. vice-pres., science bldg., to Sollitt Constr. Co., South Bend. $2,098,000. Est. $1,750,000. Bids 9/11. CD 8/30.

La., Baton Rouge—STORE—Wimberly's, Inc., c/o contractor, 30,000 sq. ft. department store, to Caldwell & McCann, P.O. Box 477. Approx. $100,000. CD 9/22.

La., Bossier City—APARTMENTS—Hamilton Road Arms Apartments, c/o Manson-McCain, archts., 8200 Florida St., Baton Rouge, 73 unit apartment development. Owner builds. $525,000.

Md., Upper Marlboro—SHOPPING CENTER—Langley Park Shopping Center, Inc., c/o contractor, 1 and 2 story, 150x500 ft., brick, concrete block, limestone shopping center, incl. 15 stores, theater and offices, air-conditioning University Lane and New Hampshire Ave., Langley Park Dist., to Standard Constr. Co., Denrike Bldg., Wash., D. C. Corning & Moore, 1726 M St. N. W., Wash., D. C., archts.

N. C., Swansboro—HOUSING—Sabiston Building Corp., Clyde L. Sabiston, pres., Jacksonville, 114 new homes,

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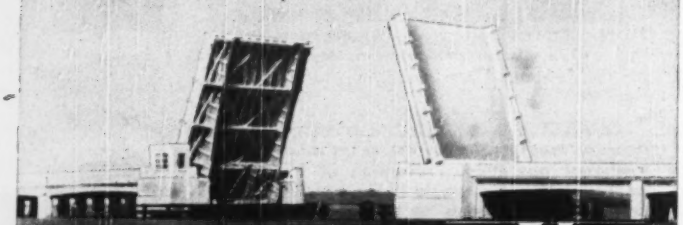

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Tenn., Nashville—THEATER—Crescent Amusement Co., c/o contractor, Greens Hills Theater-shopping center, to Sumner Constr. Co., 1514a 4 Ave. N. Approx. $350,000.

Tex., Beaumont—STORE—Rosenthal's, Inc., Beaumont, 4 story, 120x120 ft. rein.-con. store, concrete pier and beam fdn., and addn. of 1 story to existing bldg., to O. W. Collins, 4808 Protor St., Port Arthur, $344,000. Est. $375,000. Bids 9/16. CD 9/13.

Tex., Houston—HOMES—Bert R. Coats, 2204 Darrington St., 11 high class homes. Owner builds. Approx. $495,000. CD 9/29.

Tex., Houston—CHURCH—Park Memorial Baptist Church, 1019 Wayside St., church, to T. D. Howe Constr. Co., Box 7526. $559,649. CD 8/29, under LB.

INDUSTRIAL BUILDINGS

BIDS ASKED

Tex., Houston—PLANT—Bids Asked—Halliburton Oil Well Cement Co., N. Esperson Bldg., construct 1st story of plant, exclusive of fdn., $175,000. Charles S. Case, 1309 Anita St., archt. CD 9/25.

Ont., St. Catherines—GARAGE, etc.—Bids Asked—Direct-Winters Transport, 225 Queens Quay, Toronto, 90x170 ft., steel, brick garage and warehouse, $225,000. Thomas F. Wiley, 32 William St., archt. CD 7/17.

SOON LETS CONTRACT

Ala., Birmingham—WAREHOUSE—Cosby Hodges Milling Co., c/o Nelson Smith, archt., Frank Nelson Bldg., soon lets contract, warehouse addn., $75,000.

Fla., Greenville—WAREHOUSE, etc.—Tri-County Electric Co-operative, Inc., Greenville, soon lets contract warehouse and office, Dennis & Dennis, Richard V. Richard, assoc., Box 891, Albany, archts. CD 6/10/49, under Unclassified, Florida.

N. C., High Point—WAREHOUSE—U. S. Plywood Corp., c/o Wm. F. Freeman Engineers, Inc., engr., High Point, soon lets contract warehouse and office. Approx. $68,000.

LOW BIDDERS

La., Ferriday—WAREHOUSE—Concordia Electric Co-operative, Inc., Ferriday, Sept. 28, warehouse and office, from Gus Harrison, 274 Redwood Ave., Jackson, Miss., $74,900. CD 9/15.

S. C., Columbia—BOTTLING PLANT—Lumpkin Holding Co., c/o G. Thomas Harmon, archt., 3350 Millwood Ave., Sept. 28, bottling plant, from C. G. Shockley Constr. Co., 2020 Blanding St., $497,791. CD 9/14.

CONTRACTS AWARDED

Ga., Atlanta—WAREHOUSE—Akers Motor Lines Inc., c/o contractor, warehouse addn., to Mion Constr. Co., 305 Elmwood Dr., N.W. Approx. $70,000.

Ga., Atlanta—SALES and SERVICE—Yancey Bros. Co., c/o contractor, construction equipment sales and service bldg., to Gay Constr. Co., 593 Courtland N.E. Approx. $150,000.

Ill., Chicago—TRUCK TERMINAL—Aztec Lines, 1539 W. 32 Pl., 1 and 2 story, brick, steel, concrete truck terminal, to Poirot Constr. Co., 2001 W. Pershing Rd., $350,000. A. Epstein & Sons, 2011 W. Pershing St., engrs.

La., New Orleans—WAREHOUSE—Ideal Cement Co., Denver National Bank Bldg., Denver, Colo., warehouse, to A. J. MacDowell, Denver, Colo., $395,000. CD 6/29.

Md., Baltimore—WAREHOUSE, etc.—Owner, c/o J. E. Moxley, archt., 1722 Ellamont St., 1½ story, 128x180 ft., concrete, brick, structural steel, cinder block warehouse and office, 26 and Sisco Sts., to Redding & Co., 26 E. 25 St. Est. $230,000.

N. C., Wilmington—PLANT—Robertson Chemical Corp., c/o contractor, rebuild mfg. plant, to McCloskey Co., Liberty and Denny Sts., Pittsburgh, Pa. Approx. $100,000.

Okla., Tulsa—WAREHOUSE, etc.—Iverson Supply Co., 5 and Elwood Sts., warehouse and shop, to Burns-Brandes Co., 1924 E. 7 St., Zone 6, $85,906. Awarded 9/25. Block & West, Tri-State Insurance Bldg., Zone 2, archts.

▲ **Tex., Beaumont**—PLANT—Texas Gulf Sulphur Co., 2nd Natl. Bank Bldg., Houston, fabricate and erect Fifth plant serving newly developed sulphur mine in Spindletop area, to Consolidated Western Steel Corp., Box 341, Orange. Approx. $2,000,000. CD 10/5.

Tex., El Campo—PLANT—Phenix Dairy, 1220 Smith St., Houston, 2 story ice cream plant, to Glenn T. Haigler, El Campo, $154,626. CD 9/25.

Tex., Houston—WAREHOUSE—Englander Co., Inc., 5006 Calhoun Rd., 140x285 ft. addnl. warehouse, to O'Rourke Constr. Co., 4011 Koehler St., $216,000. CD 9/29.

Tex., Houston—PLANT FOUNDATION, etc.—Halliburton Oil Well Cement Co., N. Esperson Bldg., rein.-con. fdn. and bsmnt. for 2 story plant, to H. K. Ferguson Co., M & M Bldg., $77,000. CD 9/25.

Tex., Lubbock—WAREHOUSE—J. M. Radford Grocery Co., Lubbock, 160x195 ft. concrete walls and footings warehouse, to C. B. Oates, Lubbock, $99,000.

Va., Alexandria—WAREHOUSE—Victory Van Corp., 520 N. Fayette St., 2 story, 100x176 ft. brick, concrete block, rein.-con. warehouse, Fayette and Pendelton Sts., to Zerkel Constr. Co., 1011 20 St. N.W., Wash., D. C. Approx. $175,000.

Man., Winnipeg—PLANT—Liquid Carbonic Canadian Corp., 521 Archibald St., plant, MacPhillips St., to Pearson Constr. Co. Ltd., 1019 Erin St. Approx. $250,000. Moody & Moore, 295 Broadway, archts.

UNCLASSIFIED

BIDS ASKED

La., New Orleans—GAS SYSTEM—B. A. 10/26—New Orleans Housing Auth., 1111 Tulane Ave., gas sys., Lafitte Ave. Housing Units, Proj. LA 1-5. Plans deposit $15.

N. C., Charlotte—POOL—B. A. 10/26—City, City Hall, R. Foster Blaisdell, supt., Cordelia Park Pool for Charlotte Park and Recreation Comn. Plans deposit $25. J. N. Pease & Co., 119½ E. 5 St., engrs.

Kentucky—LIGHT SIGNALS—B. A. 10/27—State Hy. Dpt., Frankfort, furnishing, installing automatic flashing light signals at railroad crossing of Frankfort & Cincinnati R.R. Co., Georgetown-Cincinnati Rd., Proj. FGI 174 (3), SP 105-14, Scott Co. Plans deposit $10.

N. Y., New York—TUNNEL—B. A. 10/31—President Manhattan Boro, Municipal Bldg., Zone 7, tunnel complete with ramp approaches in 1 Ave. between E. 41 and E. 48 Sts., incl. regrading and final restoration 1 Ave. between E. 40 and E. 49 Sts., etc. vicinity of United Nations Site, with ramp approaches, etc. between E. 40 and E. 49 Sts. Plans deposit $100. CD 2/18/47.

Ga., Brunswick—MOTOR COURT—B. A. About 11/1—Peoples Mortgage Co., c/o Abreu & Robeson, archts., Box 535, Brunswick, motor court, $200,000. Plans deposit $25. CD 7/21.

California—ACTUATED SIGNAL SYSTEMS—B. A. 11/2—State Div. Hys., P. Wks. Bldg., Sacramento, semi-traffic actuated signal systems at 5 intersections and hy. lighting at one, at intersection Atlantic Blvd. and El Portal Pl., Harding Ave. and Newark Ave. and Garvey Ave. and Hitchcock Dr. and Pomona Blvd. and Findlay Ave., Montrerey Park and Montebello. G. T. McCoy, Sacramento, state hy. engr.

LOW BIDDERS

New Mexico—RURAL DISTRIBUTION LINES—Continental Divide Electric Co-operative, Grants, rejected bids Sept. 20, 230 mi. 24.4 kv distr. lines, McKinley Co. L. B. $386,920. CD 9/26, under LB.

▲† O., Sharonville—FIRE PROTECTION FACILITIES—Pub. Bldgs. Admin., General Services Bldg., Wash., D. C., fire protection facilities, federal supply service warehouses, from Baltimore Contractors, Inc., 711 S. Central Ave., Baltimore, Md., $1,118,000.

R. I., Providence—TRANSIT SHED—City, City Hall, rejected bids transit shed, Fields Point, Municipal Wharf, L. B. $921,919. Will re-advertise. CD 10/2, under LB.

Tenn., Knoxville—BASEBALL STADIUM—City, rejected bids Sept. 25, baseball stadium. L. B. $638,192. Project indefinitely postponed. CD 9/8.

Texas—RURAL DISTRIBUTION LINES—Kimble Electric Co-operative, Junction, Sept. 26, 135 mi. rural distr. lines, Edwards and Real Counties, from W. J. Thomas, Hy. 77, Dallas, $130,731. Est. $215,000. CD 9/14.

CONTRACTS AWARDED

Fla., Daytona Beach—MOTOR COURT—Slater Constr. Co., Daytona Beach, motor court. Owner builds. Approx. $50,000.

† Ga., Camp Gordon—FACILITIES—U. S. Eng., Spartanburg, S. C., rehabilitation misc. facilities at Camp Gordon, incl. sewers, water lines, etc., to W. M. Fine, Spartanburg, S. C., $150,433.

Ga., Hartwell—NATURAL GAS SYSTEM—City, natural gas sys., to Raborn, Burnett & Lambert Pipe Line Co., c/o Porter, Barry & Switzer, engrs., 1730 Main St., Baton Rouge, La. $250,000.

Mississippi, Illinois and Louisiana—COMPRESSOR STATIONS—Trunkline Gas Co., Edge, Tex., to Tellepsen Constr. Co., 1710 Telephone Rd., Houston, Tex., compressor stations, on line to east, incl. structural steel bldgs., shops and garage, at Independence, Miss. Approx. $225,000; at Joppa, Ill., $200,000; at Longville, La., $300,000; at Epps, La., $225,000. Grand total $950,000. CD 1/12.

PROPOSED PROJECTS

WATER SUPPLY

Ind., Monroe—Town Bd., Monroe, WW sys. $150,000. Nelson Watson, Hillsboro, consult. engr.

O., Dayton—Montgomery Co. Comn., Court House, Holes Creek water line, Van Burne Twp. consisting extension from David Rd. south on Far Hills Ave. to Colonial Lane, from Mad River Rd. almost to Whipp Rd., and other extens. on Colonial Lane, $125,000; water line along same property in Miami Twp., $57,-251. Earl Riber, county sanitary engr.

O., Stow—Village, John J. Liska, pres. Stow Community Council, Stow. 5 mi. water line from Stow to Kent along Route 5, to tap the Akron water line from Lake Rockwell to Akron and 20 mi. mains in Stow. 60 serve area bounded by Munroe Falls, Silver Lake Village Hyle and Richie Rds. $970,000.

Tex., Dallas—George A. Jackson & Assoc., 1806 Main St., water sys., 425 acre tract Easton St. by Garland and Jupiter Rds. $125,000.

Tex., Houston—Southern Reconstruction Corp., c/o J. G. Head, M & M Bldg., water distr. lines, facilities, in 550 acre tract beyond Municipal Airport. $125,-

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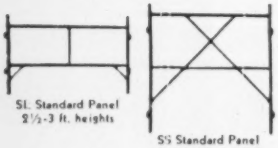

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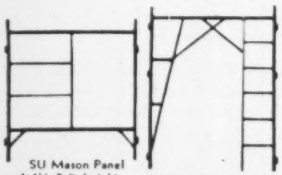

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SH Ladder Panel
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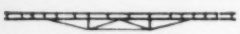

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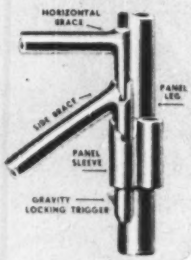

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000. Still, Wildman & Crockett, 3509 Almeda Rd. consult engrs.

▲ **Tex., Lubbock**—City, voted bonds, water supply wells and storage, elevated steel tanks, $750,000; WW sys. rehabilitation, expansion, $1,946,000. G. K. Harris, city engr.

Tex., Post—City, J. T. Hord, mayor, Post, voted bonds, WW, $150,000. CD 7/9/48.

Wash., Cheney—City, City Hall, reservoir and water mains $106,000.

Wash., Kenmore—Water Dist. 79, Kenmore, water supply sys, $65,000; distr. systems in L.I.Ds 1 and 2, each $100,000; in L.I.D. No. 3, $200,000 and in L.I.D. No. 4, $10,000. Parker & Hill, Smith Tower, Seattle, Zone 4, consult. engrs.

SEWERS, WASTE DISPOSAL

▲ **Calif., Anaheim**—Orange Co. Joint Outfall Dist., 204 Center St., Anaheim, voted $3,405,000 bonds, Magnolia-Cannery sewer disposal trunk line. Koebig & Koebig, Rowan Bldg., Los Angeles, consult. engrs.

▲ **Ill., Chicago**—City, City Hall, Zone 2, sewer project, Sect. 3-A, Kostner auxiliary sewer in Lockwood Ave., Congress to Fulton Sts., Fulton St. from Lockwood to Austin Aves. $1,000,000.

Ind., Griffith—Town Bd., Adolph Penning, clk., sewage treatment plant and sewers, $500,000. Boyd Phelps, Williams, 312 E. Colfax St., South Bend, consult. engr.

Ind., Kendallville—Bd. P. Wks., Kendallville, sewage treatment plant and sewers, $500,000. Boyd Phelps, 1000 Washington St., Michigan City, consult. engr.

▲ **Md., Cumberland**—City, City Hall, sewage disposal plant, $1,400,000. Robert T. Regester, Baltimore Life Bldg., Baltimore, engr.

Mich., Oak Park—Oakland Co., Earl L. Clark, comr., Pontiac, Schubiner Drain, trunk line sewerage sys., incl. west area Coolidge Rd. Sect. $245,000.

Minn., Blooming Prairie—Village, K. D. Void, clk., 20,742 lin. ft. 12- to 30-in. storm sewerage sys., $107,000. R. J. Ellison, 2381½ S. Snelling Ave., St. Paul, consult. engr.

N. Y., Niagara Falls—City, sanitary and storm sewers, $400,000.

Okla., Norman—City, voted bonds, storm sewer extens, $450,000. V. V. Long & Co., Colcord Bldg., Oklahoma City, consult. engrs. CD 7/31.

Tex., Baytown—City, sanitary sewerage sys. imprvs., etc., $69,000; storm sewers, imprvs., $216,000. Joe J. Rady, 811 Insurance Bldg., Fort Worth, consult. engr. CD 8/8/49.

Tex., Houston—Southern Oaks, 5410 Kirby Dr., storm sewers, open drainage, $60,000; sanitary sewers, $55,000, in 2nd new area of Sect. 3 Southern Oaks. Edminster Eng. Co., 5410 Kirby Dr., consult. engr.

Wash., Bryn Mawr—Bryn Mawr-Lakeridge Sewer Dist., Bryn Mawr, bond election Nov. 7, sewerage sys., $547,000. General Eng. Co., Central Bldg., Seattle, Zone 4, consult. engr. CD 7/11 .

BRIDGES

Fla., New Smyrna Beach—City, bridge over Halifax River linking the Mainland and Peninsula, $875,000. Reynolds, Smith & Hills, 227 Park St., Jacksonville, Zone 1, engrs.

Fla., Ormond—Ormond Special Road & Bridge District of Volusia Co., Deland, steel bridge across Halifax River, connecting Ormond and Ormond Beach, $800,000. Russell & Axon, Daytona Beach, consult. engrs.

Illinois and Missouri—Illinois Terminal R.R. Co., Terminal Bldg., St. Louis, Mo., general imprvs. to McKinley Bridge connecting Venice, Ill., and St. Louis, Mo., incl. new steel decking for new roadbed, etc., $1,000,000.

▲ **Pennsylvania**—State Hy. & Bridge Auth., Harrisburg, **Cumberland and Dauphin Counties**—approaches and feeder highways for North Bridge over Susquehanna River between Harrisburg and Wormleysburg, $2,310,000. S. P. Longstreet, c/o owner, ch. engr.

Tex., Dallas—George A. Jackson & Assoc., 1806 Main St., sanitary sewers, $175,000; storm sewers, $150,000 on 425 acre tract by Easton St. Garland and Jupiter Rds.

Tex., Houston—Southern Reconstruction Corp., c/o J. G. Head, M & M Bldg., sanitary sewers, $175,000; drainage, open and closed, $175,000, in 550 acre tract beyond Municipal Airport. Still, Wildman & Crockett, 3509 Almeda Rd., consult. engrs.

▲ **Tex., Lubbock**—City, voted bonds, storm sewers $500,000; sanitary sewer lines exten., sys. rehabilitation imprvs., $1,004,000; sanitary sewage disposal plant, $500,000. G. K. Harris, City engr.

Wash., Montesano—Grays Harbor Co., Court House, 80 ft. bridge to replace Vesta bridge which collapsed, $80,000; 110 ft. bridge at former Vesta School to replace existing bridge, $100,000, in Vesta. H. Hadley, Seaboard Bldg., Seattle, Zone 1, consult. engr.

Alta., Calgary—City, City Hall, subway, 4 St. West, $800,000.

STREETS AND ROADS

Calif., San Diego—City Council, Civic Center, imprv. portions Brooklyn Ave., 63 St., and Broadway, $111,722. Alden K. Fogg, city engr. CD 12/6/44.

Ill., Joliet—Will Co., general imprvs. to Romeo Rd., $160,000.

Ia., Red Oak—City, street imprvs. $175,000. Meno Wilhelms, Red Oak, city engr.

Minn., Blooming Prairie—Village, K. D. Vold, clk., 142,000 sq. yd. asph. on bit. surf., curb and gutter, $270,000. R. J. Ellison, 2381/2 S. Snelling Ave., St. Paul, consult. engr.

▲ Pennsylvania—State Hy. & Bridge Auth., North Office Bldg., Harrisburg,

Lehigh Co.—construct 4.5 mi. sect. proposed Allentown-Bethlehem-Easton by-pass for Route 22, from Chapmans to 2 St., extended. $1,700,000. S. P. Longstreet, c/o owner, ch. engr.

Tex., Dallas—George A. Jackson & Assoc., 1806 Main St., street constr, paving, 425 acre tract, by Easton St. Garland and Jupiter Rds. $200,000.

Tex., Houston—Southern Reconstruction Corp., c/o J. G. Head, M & M Bldg., construction and paving 60 to 100 ft. wide streets, 550 acre tract beyond Municipal Airport. $150,000. Still, Wildman & Crockett, 3509 Almeda Rd. consult. engrs.

Wash., Montesano—City, City Hall, $85,000 bond election Nov. 7, resurf. 45 blocks streets, $250,000. C. B. Shain, Funk Bldg., Olympia, consult. engr. CD 9/19.

Wash., Seattle—City, County—City Bldg., Zone 4, grading streets and constr. sidewalks in 56 Ave. S. W. and adjacent streets, $104,729. R. W. Finke, city engr.

▲ Ont., Toronto—City, H. E. McCallum, mayor, City Hall, exten. St. George St., $3,283,321; widn. Mount Pleasant Rd., $649,000; express hy. along lakeshore from Humber to Woodbine Sts., $1,800,000; new roadway, Don Valley Roadway, $8,531,353.

AIRPORTS

▲ Tex., Fort Worth—WATER PLANT EXPANSION—City, W. O. Jones, mgr., City Hall, plans by Wyatt C. Hedrick Co., engr. and archt., 1005 First Natl. Bank Bldg., addnl. work at Fort Worth International Airport, incl. expansion water plant and distr. sys.; sewage treatment plant and collector sys.; access roads, runway and taxiway lighting and traffic control, construct fencing and landscaping, relocation power line, install street lighting and high intensity lighting on northwest-southeast runway, exten. northwest-southeast runway and fencing, etc. for installation of an instrument landing sys., construct sidewalks and parking areas, $2,530,000; construct tunnels under loading fingers of Amon G. Carter Terminal Bldg., concrete approaches to ramp structure and aircraft surfacing facilities and gasoline distr. sys., $650,000.

LATIN AMERICA

Mexico, Mexico City—Pacheco y Cia. S. A., San Juan de Latran, 21-1004-05 Mexico City, plans plastic material factory. $250,000.

PUBLIC BUILDINGS

Calif., Encinitas—SCHOOL IMPRVS.—San Dieguito High School Dist., $390,000 bond election Oct. 31, school imprvs.

▲ Calif., Hawthorne — SCHOOLS — Hawthorne School Dist., 319 E. 129 St., plans by Kistner, Curtis, Wright, 816 W. 5 St., Los Angeles, Washington School addn., $505,000; York School addn., $304,800; Ramona School addn., $304,300; Williams School addn., $314,700. CD 12/21/49.

Calif., Indio—SCHOOLS—Indio School Dist., voted $425,000 bonds, schools. CD 6/30/47.

Calif., La Verne—SCHOOL—La Verne City School Dist., 6 and S Sts., plans by Kistner, Curtis & Wright, 816 W. 5 St., Lincoln School addns., $496,809.

Calif., Monterey—SCHOOL—Monterey School Dist., Box 1301, Monterey, $720,000 bond election Nov. 7, school addns. CD 5/16/47.

▲ Calif., San Gabriel—SCHOOLS—City School Dist., 301 S. San Gabriel Blvd., plans by Kistner, Curtis & Wright, 816 W. 5 St., Los Angeles, Richardson School, $492,702; Newby School, $480,859; Roses Road School, $422,220.

† Colo., Denver—PILOT PLANT—Bureau of Mines, Dpt. Interior, New Custom House, Denver, pilot plant $600,000.

Conn., Farmington—HIGH SCHOOL—Town, Bd. Educ., Farmington, 18 class room, brick, steel Junior High School, $500,000.

▲ Ill., Chicago—HOUSING—Chicago Dwelling Assoc., Langley and 60 Sts., Zone 37, plans by Holabird, Root & Burgee, 180 N. Wabash St., Zone 1, three 12 story, concrete frame apartments, incl. 350 to 400 units, $4,000,000. CD 9/7.

▲ Ill., Danville—SCHOOL—Danville School Dist. 118, Danville, plans by Blackman & Strader, Danville, Junior High School, $1,322,180; Elmwood School, $298,537; Hooton School, $273,911; Fair Oaks School, $296,967.

▲ Ill., Dixon—HOUSING—Lee County Housing Auth., Dixon, 80-unit housing program, $1,000,000.

▲ Ill., East Dundee—SCHOOLS—School Dist. 300, East Dundee, plans by Bradley & Bradley, 226 S. Main St., Rockford, two grade and one high schools, $1,000,000.

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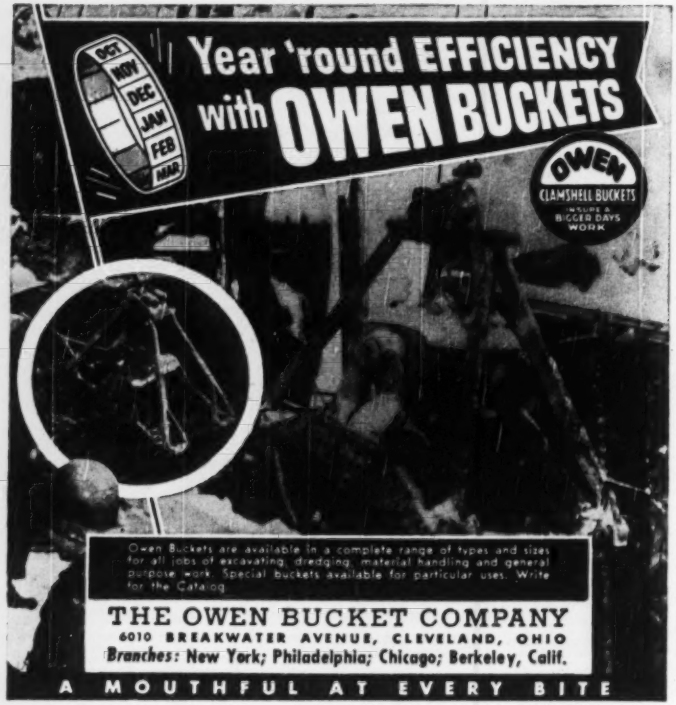
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▲ **Ill., Peoria**—HOUSING—Peoria Housing Auth., 220 Warner Home Court, plans by Gregg & Briggs, First National Bank Bldg., 154 dwelling units in Harrison Homes addn., on 51 acre site. $1,711,000.

Ind., Frankfort—HOSPITAL—Clinton County Hospital Assn., Frankfort, plans by Rodney Leonard, Trasher Bldg., 3 story, 125x182 ft., brick, stone hospital addn. $945,000. CD 7/31/47.

Kan., Turner—SCHOOL—Turner High School Dist., RFD from Kansas City, Kan., plans by J. W. Radotinsky, 1401 Fairfax Trafficway, Kansas City, Kan., high school. $450,000. CD 9/22.

La., Baton Rouge—SCHOOL—Louisiana State University, Baton Rouge, plans by Nolan, Norman & Nolan, Q and C Bldg., New Orleans, and Smith & Padgett, Ouchita National Bank, Monroe, school, auditorium, music bldg., $260,000; 2 story central admin. bldg., $275,000; cafeteria, gymnasium, manual arts, $250,000. CD 6/26.

▲ **La., Crowley**—HOUSING—Crowley Housing Auth., Crowley, plans by Jos. H. Gaylord, 722 N. P. Anderson Bldg., Ft. Worth, Tex., 300 housing units. $2,850,000.

La., Kaplan—HOUSING—Kaplan Housing Auth., plans by Jos. H. Gaylord, 722 N. P. Anderson Bldg., Ft. Worth, Tex., 100 housing units. $950,000.

La., Monroe—HOUSING—Monroe Housing Auth., Monroe, plans by Jos. H. Gaylord, 722 N. P. Bldg., Ft. Worth, Tex., 100 housing units. $950,000. CD 10/24/49.

▲ **La., Ville Platte**—HOUSING—Ville Platte Housing Auth., Robt. Thompson, chn., plans by Jos. H. Gaylord, 922 N. P. Andersan Bldg., Ft. Worth, Tex., 150 housing units. $1,425,000.

Md., College Park—PHYSICS—State, Dpt. P. Imprvts., 506 Park Ave., Baltimore, Zone 1, plans by Hall, Border & Donaldson, 2517 N. St. Paul St., Baltimore, 4 story, concrete, steel, brick, cinder block physics bldg. at University of Maryland, College Park, $650,000. John B Funk, 506 Park Ave., Baltimore, ch. engr. CD 8/6/45.

▲ **Mass., Randolph**—SCHOOL—Town, Bldg. Comn., Clark C. Freeman, chn., plans by Harry J. Korslund, 506 Washington St., Norwood, brick, concrete Junior Senior High School, N. Main St. $1,305,000. CD 12/2/49.

Mass., Rockland—SCHOOL—Town of Rockland Elementary School Bldg. Comn., plans by Thomas Worcester, Inc., 84 State St., Boston, brick, steel, concrete school. $400,000.

Mich., Adrian—JAIL—Bd. Supervs. Lenawee Co., Court House, plans by Britsch & Munger, Nicholas Bldg., Toledo, O., bond election Nov. 7, 2 story jail on present site across Front St., $400,000. CD 2/20/47.

† **Neb., Omaha**—SCHOOLS—School Dist. 66, Loveland Dist., R. F. D. from Omaha $670,000 bond election Oct. 24, high school. $550,000. L. A. Daly Co., Insurance Exchange Bldg., archt.

N. J., Hasbrouck Heights—HOSPITAL WING—Hasbrouck Heights Hospital Bd. Governors, City Hall, Hasbrouck Heights Hospital wing. $500,000.

▲ **N. J., Long Branch**—HOUSING—Long Branch Housing Auth., plans by H. Irving Braun & James Mancuso, 191 and 252 Broadway, two housing, 146 units, one consisting of 46 units, east of Ellis Ave. between Central and Sea View Aves., and other comprising 100 units, on former Norwood Oval tract on east side of Wardell Pl. between High St. and West End Ave. $1,681,000.

N. Y., Brooklyn—LIBRARY—Dpt. P. Wks., Municipal Bldg., New York, Zone 7, plans by Knappe & Johnson, 368 E. 149 St., New York, Zone 55, 2 story Eastern Parkway Branch Library, 2107-2121 Ocean Ave $500,000. CD 2/14/45.

N. Y., New York—HOSPITAL—Dpt. P. Wks., Municipal Bldg., Zone 7, plans by Albert Bauer, c/o owner, Lincoln Hospital alterations, 141 St. and Concord Ave. $800,000. CD 2/14/45.

N. C., Chapel Hill—PSYCHIATRIC WING—University of North Carolina, Gordon Gray, pres., Chapel Hill, 4 story psychiatric wing for 4-year teaching. $660,000.

O., Castalia—SCHOOL—Margaretta School Dist., Castalia, $442,000 bond election Nov. 7, school imprvs. CD 12/9/47.

▲ **Pa., Carnegie**—HIGH SCHOOL—School Dist. of Carnegie, Carnegie, plans by W. C. Young, Standard Life Bldg., Pittsburgh, high school. $1,000,000.

Pa., Geistown—HIGH SCHOOL—School Dist.-Richland Twp., Richland Twp. High School, Geistown, plans by Hunter, Caldwell & Campbell, 515 U. S. Bank Bldg., Johnstown, 2 story, brick, tile high school, Richland Twp. $500,000.

▲ **Pa., Johnstown**—HOUSING—Johnstown Housing Auth., 619 Thomas Ave., plans by Horace A. Bailey, 305 Bedford St., 2 story, 25x100 ft., 250 unit brick veneer row type housing development. $4,900,000.

▲ **Pa., Moon Twp.**—HIGH SCHOOL—School Dist. Moon Twp., R. D. 3, Coraopolis, plans by Button & McLean, 119 E. Montgomery Ave., Pittsburgh, high school. $1,500,000. CD 7/2/47.

† **Pa., Pittsburgh**—HOME and HOSPITAL—Bd. Comrs., Allegheny Co. Court House, plans by Button & McLean, 119 E. Montgomery St., 2 story, brick county home and hospital incl. 4 story admin. bldg., in Scott Twp., Old Bower Hill Rd. $13,415,000. CD 1/6/47.

Pa., West Mifflin—SCHOOL—Bd. Educ., Homeville Junior High School, Terrace, plans by Button & McLean, 119 E. Montgomery Ave., Pittsburgh, 2 story, bsmnt., brick Homeville School. $600,000.

▲ **Tex., Archer City**—HOUSING—Archer City Housing Auth., Archer City, 160 housing units. $1,425,000.

Tex., Bonham—HOUSING—Bonham Housing Auth., Bonham, plans by Smith & Mills, 921 Mercantile Bank Bldg., 64 housing units. $611,000. CD 9/16/50.

▲ Tex., Brownsville—HOUSING—Brownsville Housing Auth., Brownsville, plans by Boese & Harkrider, T. & P. Bldg., Fort Worth, 122 housing units, $1,233,000; 128 housing units for Latin-Americans, $1,231,000. CD 10/18/49.

Tex., Brownwood — HOUSING — Brownwood Housing Auth., Brownwood, plans by Bentley Bros. & Nelson, 228 Reserve Loan Life Bldg., Dallas, 50 housing units. $494,000. CD 9/20/49.

▲ Tex., Conroe—SCHOOLS—Conroe Independent School Dist., Conroe, plans by Stone & Pitts, 1872 Calder Ave., Beaumont, school remodeling, addns., $350,000; 21-room elementary school, $400,000; vocational school, $250,000; 24-room Negro School, $450,000; field house, 5,000 seating stadium, $125,000.

Tex., Dallas—SCHOOL—Dallas Independent School Dist., Akard and Royal Sts., plans by Mark Lemmon, 1210½ Main St., masonry San Jacinto School. $554,000.

Tex., Hico—HOUSING—Hico Housing Auth., Otis Petsick, chn., Hico, 75 housing units. $600,000.

Tex., Lubbock—FIRE STATION—City, voted bonds, fire station. $431,000. G. K. Harris, city engr.

▲ Tex., Pittsburg—HOUSING—Pittsburg Housing Auth., Pittsburg, plans by Christensen & Christensen, 709 N. St. Paul St., Dallas, 30 brick veneer housing units, concrete slab fdn. $520,000; 30 one story brick veneer housing units, concrete slab fdn., $520,000. CD 1/19.

Tex., Pottsboro—HOUSING—Pottsboro Housing Auth., Pottsboro, 100 housing units. $950,000.

Tex., Waxahachie—SCHOOLS—Waxahachie Independent School Dist., Waxahachie, plans by Wilson & Patterson, 202 Majestic Bldg., Fort Worth, high school, $450,000; addns., alterations to 5 schools, $350,000.

Va., Fairfax—HIGH SCHOOL—Falls Church School Bd., 1057 W. Broad St., Falls Church, plans by McLeod & Ferrara, 1741 De Sales St. N. W., 325-pupil brick, concrete Junior-Senior High School, Haycock Rd. and Leesburg Pike. Approx. $600,000. CD 6/6.

† Va., Fort Eustis—HOUSING—U. S. Eng., 90 Church St., New York 7, N. Y., 412 housing units.

▲† Va., Norfolk—COMMUNICATIONS CENTER—Yards & Docks Annex, Navy Dpt., Arlington, Va., plans by Marcellus Wright & Son, 1103 E. Main St., Richmond, and Frank Grad & Sons, 187 Market St., Newark, N. J., communications center. $11,600,000.

▲ Wash., Ephrata—SCHOOLS—School Bd., Ephrata, $325,000 bond election and $80,000 special levy, Nov. 7, grade school, $230,000; high school, $1,000,000. W. H. Rothe, Yakima, archt. CD 12/2/48.

▲ Wash., Parkland—SCHOOL—Franklin-Pierce School Dist., Parkland, plans by Lea, Pearson & Richards, Tacoma Bldg., Tacoma, high school, $1,000,000. CD 3/17/49.

▲ Wash., Seattle—CIVIC MEMORIAL ART CENTER—City, $1,500,000 bond election Nov. 7, Civic Memorial Art Center, incl. opera house, concert hall and other public bldgs.

N. S., Stellarton—HOSPITAL—Municipality, hospital, $400,000.

Ont., Toronto—COLLEGIATE—City, H. E. McCallum, mayor, City Hall, plans by A. J. Freestone, Bd. Educ., 155 College St., Lawrence Park Collegiate addn., incl. playing fields and bleachers, $950,000. CD 11/22/48.

COMMERCIAL BUILDINGS

▲ Calif., North Long Beach—SHOPPING CENTER—Lakewood Center Inc., 633 S. Witmar St., Los Angeles, plans by Albert C. Martin & Assocs., 333 S. Beaudry Ave., Los Angeles, shopping center on 154 acre site, $20,000,000.

▲ Calif., North Long Beach—DEPARTMENT STORE—May Department Stores, 6 and Olive Sts., St. Louis, 1, Mo., plans by Albert C. Martin, 333 S. Beaudry Ave., Los Angeles, department store, $5,000,000.

Calif., Santa Barbara—HOSPITAL—St. Francis Hospital, Santa Barbara, plans by Pereira & Luckman, 7421 Beverly Blvd., Los Angeles, 65 bed hospital addn. $750,000.

Ill., Broadview—OFFICE, etc.—Allied Van Lines, 25 Ave. and Roosevelt Rd., plans by Frederick Stanton, 225 N. Michigan Ave., Chicago, 1 and part 2 story, office, warehouse, transfer station, $450,000.

▲ Ill., Chicago—RESIDENTIAL STRUCTURE—Chicago Theological Seminary, 58 and Woodlawn Sts., Zone 37, plans by Puckey & Jenkins, 400 N. Michigan St., Zone 11, 3 story, steel concrete, brick, stone residential structure. $1,000,000.

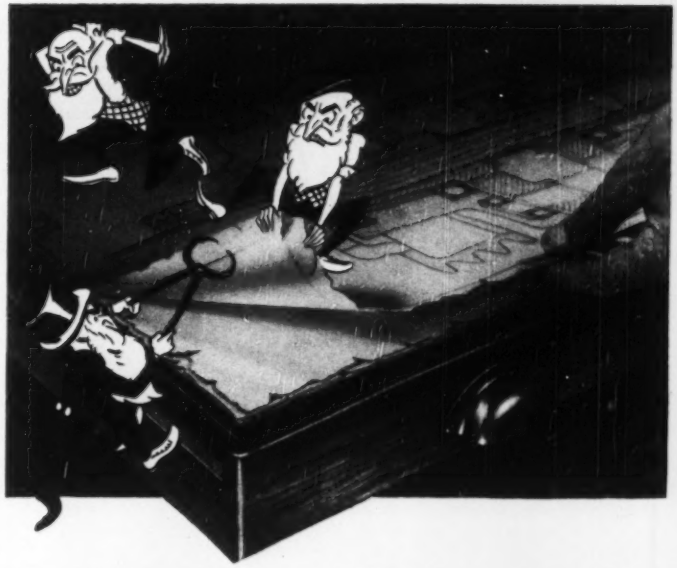
▲ Ill., Chicago—HOSPITAL—Resurrection Hospital, 7400 Talcott Ave., Zone 31, plans by Schmidt, Garden & Erikson, 104 S. Michigan Ave., Chicago, hospital. $1,250,000.

▲ Ill., Rock Island—HOSPITAL—St. Anthony's Hospital, 767 30 St., plans by Schmidt, Garden & Erikson, 104 S. Michigan St., Chicago, 60-bed hospital addn. $1,500,000. CD 2/20.

Ia., Cedar Rapids—LODGE—Masonic Grand Lodge of Iowa, 210 6 St. N. E., plans by Hansen & Waggoner, Mason City Lodge. $600,000.

▲ Md., Silver Spring—OFFICE—Samuel Eig, 6416 Georgia Ave. N. W., Wash., D. C., plans by Arthur L. Anderson, 1726 M. St. N. W., Wash., D. C., 4 story, 150x226 ft. brick, limestone, steel office and 3 stores 8600 block Colesville. $1,000,000.

Mass., Lowell—HOSPITAL—St. Joseph's Hospital, Merrimack St., plans by Edward T. P. Graham, 171 Newbury St., Boston, hospital expansion, Merrimack St., $750,000.



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N. J., Keyport — SCHOOL, etc. — St. Joseph's Catholic Church, Maple Pl., Keyport, St. Joseph's school and convent addn. $500,000.

N. Y., Brooklyn—CLUBHOUSE—Brownsville Boys Club, Inc., 417 Christopher Ave., Zone 12, plans by Lama, Proskauer & Prober, 383 Pearl St., Zone 1, clubhouse, 598-626 Christopher Ave. $500,000.

N. Y., Kew Gardens—APARTMENT—Kewshire Apartments, c/o Schulman & Soloway, archts., 4 Court Square, Brooklyn, Zone 2, 6 story apartment, 85 Ave. and 120 St. $420,000.

N. Y., New York—APARTMENT—Peter H. Agins, 2685 University Ave., Zone 63, plans by Tito Di Vincenzo, 254 W. 54 St., Zone 19, 6 story apartment, Kingsbridge Terrace, south of Kingsbridge Rd. $800,000, CD 9/7.

N. Y., New York—APARTMENT—Gerard Assoc., Inc., 1504 Sheridan Ave., Zone 57, plans by Leo Stillman, 332 E. 149 St., Zone 51, 6 story apartment, Gerard Ave. north of 162 St. $850,000.

▲ N. Y., New York—APARTMENT—Lafayette Gardens, Inc., 2190 Boston Rd., Zone 60, plans by Charles E. Greenberg, 565 Fifth Ave., Zone 17, apartment, 328-44 Haven Ave. and 1338-66 Riverside Dr. $1,500,000.

N. Y., New York—HOME, etc.—Francis Schervier Home & Hospital, 2975 Independence Ave., Zone 63, plans by Max H. Fuley, 101 Park Ave., Zone 17, 7 story home and hospital alterations. $500,000.

Pa., Altoona—SISTERS HOME—Mercy Hospital, 1020 Franklin St., plans by A. Pyzdowski, 3410 Fleetwood St., Pittsburgh, 3 and 4 E-shape brick, concrete sisters home. $500,000.

R. I., Providence—HOSPITAL—Catholic Diocese of Providence, c/o John F. Hogan, archt., 385 Westminster St., 125-bed, brick, steel, concrete hospital to be known as Our Lady of Fatima Hospital, High Service Ave., Fruit Hill Sect. $550,000.

▲ S. C., Charleston—RETAIL STORE—Sears Roebuck & Co., W. Arthington and S. Homan Sts., Chicago, Ill., retail store. $1,200,000.

Tex., Beltaire—DWELLINGS—John Filippone, Medical Arts Bldg., Houston, 37 masonry dwellings, concrete slab fdn. $481,000.

Tex., Beltaire—DWELLINGS—Thomas W. Menefee, 318 Conoly St., Houston, 42 masonry, frame dwellings, concrete slab fdn. $504,000.

Tex., Beltaire—DWELLINGS—Taylor Lumber Co., 401 Jensen Dr., Houston, 54 masonry dwellings, concrete slab fdn. $648,000.

Tex., Houston—RESIDENCES—S. N. Adams, 4001 Westheimer Rd., 35 two story masonry, high-class residences, concrete slab and pier fdn. $875,000.

▲ Tex., Houston—DWELLINGS—S. N. Adams & Co., 4001 Westheimer Rd., 75 frame dwellings on 75 reserve lots in Oak Estates sub-division, $575,000; addnl. masonry shopping center units in Westheimer and Drexel Sts., $500,000.

Tex., San Antonio—DWELLINGS—James B. Roark & G. Sexauer, Transit Tower, 100 addnl. frame dwellings, concrete post and slab fdn. in a new and adjacent sect. off E. Houston St. $625,000.

▲ Alaska, Anchorage—APARTMENT, etc.—Harry Lewis, Myer Lurie & Melvin Lurie, 3447 Ave. S, Seattle, Wash., plans by E. W. Morrison, 719 Second Ave., Bldg., Seattle, 4, Wash., 360 unit block apartment, $3,000,000; 500 homes at Goose Lake, $5,000,000. CD 8/3.

Que., Montreal—ORPHANAGE—St. Joseph Italian Orphanage Bd., 1207 St. Andrew St., plans by P. Colangeo, 3710 St. Catherine Rd., orphanage, Belanger St. $450,000.

INDUSTRIAL BUILDINGS

▲ Ala., Decatur—PLANT—Chemstrand Corp., c/o American Viscose Co., Delaware Trust Bldg., Wilmington, Del., and Monsanto Chemical Co., 1700 S. Second St., St. Louis, Mo., synthetic fiber plant, near here. $3,750,000.

Ind., Fort Wayne—SUB-STATION—Indiana & Michigan Electric Co., J. Calvin Hill, div. mgr., 2101 Spy Run, sub-station, Monroe St. and Pettit Ave., smaller sub-station expansion, Anthony Blvd. and Lanternier St. $519,000.

Ind., Gary—FACTORY, etc.—Anderson Co., J. W. Anderson, pres., 11 and Grant Sts., plans by Beine, Hall & Curran, archts. and engrs., 607 Broadway, 1 story, 140x287 ft. factory and 2 story, 50x140 ft., office, office, both brick, concrete, structural steel, $356,000.

▲ Ind., New Castle—PLANT—Chrysler Corp., 12200 E. Jefferson St., Detroit, Mich., 80x525 ft. pressing machine department bldg., and 50x300 ft. die department addn. $1,000,000.

▲ La., Lake Charles—REFINERY—Continental Oil Co., Oil & Gas Bldg., Houston, Tex., doubling capacity refinery for mfg. high-octane gasoline and catalytic cracking unit, $10,000,000; pipe line units, $450,000.

Mich., Detroit—FACTORY—Chevrolet Motor Division, General Motors Corp., 3044 W. Grand Blvd., plans by H. E. Beyster Corp., 2100 Industrial Bank Bldg., 2 story, 60x470 ft. factory addn. $375,000.

Mich., Battle Creek—PLANT—Battle Creek Courier & News, Thompkins and W. Van Buren Sts., plans by Lewis J. Sarvis, 201 Bailey Bldg., 2 story, bsmt., brick, steel 45,000 sq. ft. newspaper plant, Thompkins St. $435,000.

Mich., Paw Paw—WINERY—Wines Corp. of America, 3737 S. Sacramento St., Chicago 32, Ill., winery, $500,000.

▲ Minn., Aurora—STEAM PLANT—Minnesota Power & Light Co., 30 W. Superior St., Duluth, 2 44,000 kw. steam electric generating units for steam plant,

Ebasco Services, Inc., 2 Rector St., New York 6, N. Y., consult. engr. generating units and condensors awarded to Westinghouse Electric Co., 40 Wall St., New York, N. Y.

▲ **Miss., Brandon — PLANT** — Marquette Cement Mfg. Co., 20 N. Wacker St., Chicago, Ill., cement producing plant, incl. portland cement oil well and masonry cement on 500 acre tract at intersection of U. S. Hy. 80 and tracks of Illinois Central R. R. Several million dollars.

▲ **Tex., Beaumont**—MINING PLANT—Texas Gulf Sulphur Co., 2nd Natl. Bank Bldg., Houston, steel, concrete sulphur mining plant units on 60 acre tract. $1,000,000.

▲ **Tex., Dallas**—GENERATING UNIT—Dallas Power & Light Co., Dallas Power & Light Bldg., Parkdale addn. electric generating unit. $12,000,000.

▲ **Tex., Denison**—REFINERY—Conway Oil Co. Denison, refinery for mfg. edible oils. $1,300,000.

Tex., Houston—CHEMICAL PLANT—Lubrizol Corp., N. Esperson Bldg., chemical mfg. plant expansion. $500,000.

Tex., Wichita Falls—PUMP STATION, etc.—Basin Pipe Line Co., Wichita Falls, modifications, remodeling pump station in area between Colorado City and Wichita Falls, $400,000; addnl. booster station unit, $200,000.

Va., Arlington—WAREHOUSE—Smith's Transfer & Storage Co., Inc., 1313 U St. N.W., Wash., D. C., plans by Raymod Mims, 2420 Wilson Blvd., 5 story, 100x 110 ft., brick, cinder block warehouse and five stores, 2600 Wilson Blvd.

▲ **Va., Scottsville**—PLANT, etc.—Old Dominion Electric Co-operative, Chase City, plans by H. A. Kuljian & Co., 1200 N. Broad St., Phila., Pa., steam generating plant and electric transmission lines. $19,000,000. Southern Eng. Co., 1000 Crescent Ave. N. E., Atlanta, Ga., consult. engr.

E. B., Havelock—CEMENT PLANT—Canada Cement Co., Ltd., Montreal, Que., cement plant. Approx. $500,000.

▲ **Ont., St. Catherines**—FACTORY—McKinnon Industries, St. Catherines, plans by Thomas R. Wiley, 32 William St., 135,000 sq. ft. automotive parts factory addn. incl. iron foundry on 130 acres of former government land. $10,000,000.

UNCLASSIFIED

▲ **New Mexico**—RURAL DISTRIBUTION LINES—Springer Electric Co-operative, Springer, 95 mi. 6/Nv rural distr. lines, three 1,900 kva sub-stations, 378 mi rural distr. lines and sys. imprvs., Colfax Co. $1,170,000. CD 7/30/48.

Oregon—RURAL DISTRIBUTION LINES—West Oregon Electric Co-operative, Vernonia, 32 mi. rural distr. lines, 2 sub-stations, 35 mi. rural distr. lines and sys. imprvs., Columbia Co. $445,000.

▲ **Pa., Pittsburgh**—AMPHITHEATER—Edgar J. Kaufmann Charitable Trust, 5 and Smithfield Sts., plans by Mitchell & Ritchey, 306 4 Ave. Bldg., amphitheater arena, approx. 9,000 capacity, revolving stage, parking facilities, Schenley Park. $1,500,000.

▲ **Texas, Louisiana, Arkansas, Missouri, Illinois**—PIPE LINE—United States Pipe Line Co., N. Esperson Bldg., Houston, 1,078 mi. 24 in. oil products pipe line carrier between areas of Beaumont and Houston, Tex. to Chicago, Ill. via St. Louis, Mo., incl. terminal facilities en route. $88,000,000.

Tex., Austin—MAUSOLEUM—Texas Mausoleum Corp., c/o W. H. Johnson, et al, Littlefield Bldg., 588 crypt, stone and marble mausoleum, $450,000. Elaine Wiley, c/o owner, Staff Artist.

Tex., Kermit—SWIMMING POOL, etc.—Winkler Co., J. B. Salmon, judge, Court house bond election Nov. 7, rein.-con. swimming pool, $75,000; county park and playgrounds, $175,000.

Tex., Kermit—LIVESTOCK BARNS, etc.—Winkler Co., J. B. Salmon, judge, Courthouse, bond election Nov. 7, livestock barns, exhibition bldg., roping arena, stock pens. $250,000.

Tex., Lubbock—PARKS, etc.—City, voted bonds, parks, playgrounds, recreation. $625,000. G. K. Harris, city engr.

Tex., Lubbock—CABLE LINE—City, voted bonds, heavy underground electric cable line, $416,350. G. K. Harris, city engr.

▲ **Tex., Lubbock**—STREET LIGHTING, etc.—City, voted bonds, street lighting exten., imprvs., $188,000; 11,000 kw. electric generator power unit, $1,208,000. G. K. Harris, city engr.

▲ **Tex., Whitney**—TRACK REMOVAL—Atcheson, Topeka & Santa Fe Railway System, J. A. Noble, ch. engr. (western region), Amarillo, taking up, removing and relocating railway tracks and appurtenances in vicinity Whitney Dam Proj. $3,500,000.

▲ **Alaska**—TUNNEL—Bureau Reclamation, Dpt. Interior, Bldg. 1- A, Denver Federal Center, Denver, Colo., excavation and construction of concrete-lined tunnel and surge tank for Eklutna Proj., approx. 30 mi. northeast of Anchorage, or approx. midway between Anchorage and Matanuska Valley, tunnel will be approx. 22,000 ft. long, extend in a northwesterly direction from Lake Eklutna through Goat Mountain to point approx. 800 ft. above sea level near Palmer Hy. tunnel will consist of concrete-lined circular sect. approx. 9 ft. in diam. with lining approx. 10 in. thick, as an alternate to exposed steel penstocks, a combination concrete and steel-lined inclined tunnel is being considered. This alternate would consist of circular steel liner, approx. 6 ft. in diam. to be placed inside of approx. 12 ft. diam. tunnel, space between the steel liner and the excavation to be backfilled with concrete.

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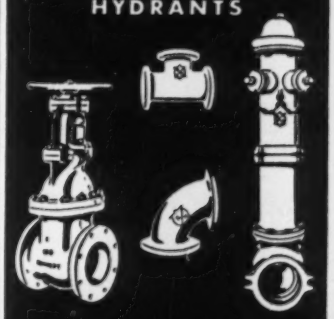

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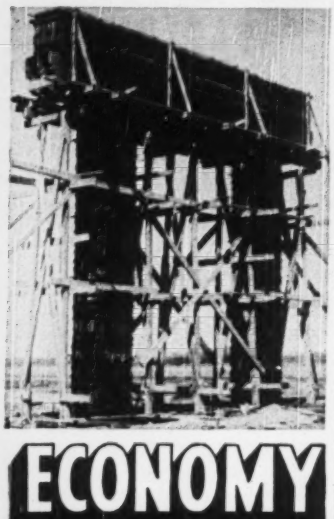

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CONSTRUCTION REPORTS—Second Section

WATER SUPPLY

BIDS ASKED

Ia., Albion—B.A. 10/24—City, water sys. $60,000. H. V. Pedersen, Marshalltown, engr. CD 9/1.

Ill., Wilsonville—B.A. 10/30—At office Deno Filippini, village clk., Village Hall, water works imprv. $124,000. Plans deposit $10. Warren & Van Praag, Inc., 253 S. Park St., Decatur, consult. engr. CD 6/20/46.

LOW BIDDERS

N. J., Trenton—City, City Hall, Installing 34,300 ft. 6- to 8-in. water mains in sections of Hamilton, Ewing and Lawrence Twps., from A. J. Cunningham & Sons, 370 Newkirk Ave., $122,929. CD 7/13/49.

Wis., Sheboygan Falls—City, Sept. 28, 16 in. water mains from Chapel & Amundson, 708 S. Broadway, Green Bay, $127,940; small pipe extens., from F. Swatscheno Co., Menasha, $31,181. CD 9/20.

CONTRACTS AWARDED

N. J., Atlantic City—City Comn., City Hall, 1 m.g. water standpipe near Virginia and Casplan Ave., to Pirnie Eng. Co., 25 W. 43 St., New York, N. Y., $250,000. Awarded 10/5.

Pa., Phila.—Dpt. P. Wks., City Hall Annex, water mains, WWI-144, Fairmount Park—Penna Ave., to A. Di Sandro, 333 Stanwood St., $579,589. Elbert J. Taylor, Water Bur. Chief. Bids 9/28. CD 9/21.

SEWERS, WASTE DISPOSAL

BIDS ASKED

Pa., Mayview—B.A. 10/25—General State Auth., 18 and Herr Sts., Harrisburg, sewage disposal plant and collection sys. for rainwater and sanitary sewage at Mayview State Hospital. $422,000. Plans deposit $10 each. Morris Knowles, Inc., 1312 Park Bldg., Pittsburgh, Zone 22, engrs. CD 2/16.

LOW BIDDERS

Miss., Gulfport—Harrison Co., trunk sewer lines near Henderson Point, from G. C. Lewis, 1626 19 Ave., Sect. A, $178,300; Sect. B $228,932. CD 9/14.

Pa., Lehighton—Lehighton Sewage Auth., Lehighton, Sept. 26, sanitary sewers, Sect. 2, from Berlanti Constr. Co., Schuylkill Haven, $490,819***Sect. 1, from Di Marco & Ciccone, Schuylkill Haven, $164,772***sewage treatment plant, Contr. 2, from A. Fewton Bugbee Co., Catasauqua $239,600. CD 9/21.

Pa., Phila.—Dpt. P. Wks., City Hall Annex, Oct. 2, sewers, B-1, Cheltenham Ave., from A. J. Ellis Constr. Co. Inc., 4607 N. 4 St., $157,381; sewers, B-2 7 St., from D & C. Spinosa Co., 2 N. Jerome St., Allentown, $67,674. CD 9/26.

CONTRACTS AWARDED

▲ **Mass., Fall River**—City, City Hall, Intercepting sewer, appurtenances, to Pacella Bros., 63 Olney St., Dorchester, $1,537,720. Bids 8/15 awarded 9/22. CD 8/21 under L. B.

▲ **N. J., Camden**—City, City Hall, Delaware River Intercepting Sewer, North Section, Constr. 8, to C. Salvatore & Son, 394 Washington St., and Joseph Miele, 394 Washington St., East Orange, N. J., $1,185,000. Bids 9/20. CD 9/26, under LB.

▲ **Pennsylvania**—Gulf Oil Corp., Gulf Bldg., Pittsburgh sewerage disposal facilities, to R. S. Noonan, Inc., 26 N. Duke St., York, $1,000,000. A. E. Neff, co. ch. engr.

BRIDGES

BIDS ASKED

Md., Baltimore—B.A. 10/24—Baltimore & Ohio R. R. Co., A. C. Clarke, ch. engr., Charles and Baltimore Sts., steel, concrete Baltimore & Ohio Bridge over Pulaski Hy. between Monument St. and Erdman Ave.

La., Centerville—B.A. 10/25—St. Mary Parish Police Jury, c/o engr., bridge over Bayou Teche. Plans deposit $35. T. F. Kramer, 108 Commercial St., Franklin, engr.

CONTRACTS AWARDED

▲ **Georgia**—State Hy. Dpt., Atlanta, wid'n. pavement, bridge on Oconee River and an overflow bridge on Dublin to Swainsboro Rd., beginning at junction of S.R. 19 and 29 west of The Courthouse in Dublin and exten. east on S.R. 26 to junction with S.R. 29, UI-005 (4), Laurens Co. to Claussen-Lawrence Constr. Co., Augusta, $1,040,101***Contr. 1, concrete spans 1 to 11 (inclusive) and 44 to 46 (inclusive) steel beam spans (incl. conc. slabs) 12 to 14 (inclusive) and 41 to 43 (inclusive), concrete walls, curbs, etc. adjacent to abutments for Turtle River Bridge at Brunswick FI-009-2(6) Glynn Co. to W. J. Tidwell, Jr., Douglasville, $273,795. CD 9/8***bridge and graded approaches 0.751 mi. on Leverett to S.R. 43 Road, SAP -1945 (2), Lincoln Co., to Coffee Constr. Co., Eastman, $164,535***overhead bridge at Georgia Southern & Florida R.R. at north city limits of Cordele on relocation of Cordele to Vienna Rd., FGI-001-2 (3), Crisp Co., to H. M. Pafford Jr., Waycross, $70,547***bridge at Chattooga River on Holland to Summerville Rd., Contr. 2, S 0815 (1), Chattooga Co., to G. L. Strickler, Austell, $57,566***bridge graded approaches 1.31 mi. on Thomson to Lincolnton Rd., SAP -1915 (2), McDuffie and Lincoln Counties, to Leo T. Barger, Moultrie, $272,000***bridge and grading, surf. 0.907 mi. on relocation of Goshen to S.R. 72 Road,-S.R. 79, SAP-1575-A(4), Lincoln Co., to Trussell Constr. Co., Columbus, $79,864. Grand total, $1,958,408. Bids 9/29, awarded 10/4. CD 9/21.

Kan., Wichita—Sedgwick Co., 25 small wooden bridges. Owner builds. $100,000, Rufus Kirk, Wichita, co. engr. CD 9/22.

La., Melville—Texas & Pacific R. R. Co., R. J. Gammie ch. engr. Texas & Pacific Bldg., Dallas, Tex., altering railway bridge across Atchafalaya River, to Massman Constr. Co., 20 W. 9 St., Kansas City, Mo., and Kansas City Bridge Co., 215 Pershing Rd., Kansas City, Mo., $862,947. Bids 9/19. CD 9/26, under LB.

New Mexico—State Hy. Dpt., Santa Fe, 737 ft. concrete, steel bridge and approaches, S. R. 6 across Rio Grande east of Belen, FAP No. S-54 (3), Valencia Co. and 1,353 ft. concrete, steel bridge across Rio Grande, U.S. 66 in the city of Albuquerque, FAP No. U-178 (7), Bernalillo Co., to J. H. Ryan, Box 513, Albuquerque, $240,067 and $528,489 respectively. Bids 10/6.

Oklahoma—State Hy. Dpt., Capitol, Oklahoma City, to Amis Constr. Co., 1647 Exchange, Oklahoma City, Zone 8, 2 concrete, steel bridges on Hy. 41 near Cushing, Payne Co., $100,053, est. $102,800; 3 concrete, steel underpasses on U. S. 60 by pass route south of Ponca City, Kay Co., $78,327, est. $81,718; 2 concrete steel underpasses on U. S. 60 by pass route south of Ponca City, Kay Co., $237,809, est. $239,775***to Moore Bridge Co., Ada, concrete, steel underpass on U. S. 60 by pass route south of Ponca City, Kay Co., $108,818, est. $103,969***to Roberts & Scisson, Admiral Blvd., Tulsa, 3 concrete, steel bridges, U. S. 62, west of Wagoner to Wagoner Co., $71,398, est. $75,960. Grand total $596,405. Bids 10/3, awarded 10/4. CD 9/27.

STREETS AND ROADS

LOW BIDDERS

New Hampshire—State Hy. Dpt., Concord, Oct. 9, grading, drainage, road mix pavement 2.8 mi. N. H. Route 103 in towns of Sunapee and Newbury, from Frank W. Whitcomb Constr. Corp., North Walpole, $437,835.

CONTRACTS AWARDED

▲ **California**—State Div. Hys., 120 S. Spring St., Los Angeles, C. conc. on cement treated subgrade, etc., constr. 3 grade separation structures, 2 pedestrian overcrossings to provide a freeway with 6-lane divided roadbed 2.3 mi. Santa Ana Freeway between Augusta Ave. and 0.1 mi. easterly Rio Hondo, Los Angeles Co., to United Concrete Pipe Corp. & Ralph A. Bell, 425, Baldwin Park, $1,645,115. Bids 9/21 CD 9/27, under LB.

▲ **Georgia**—State Hy. Dpt., Atlanta, base, surf., 1 bridge 6.353 mi. Americus to Vienna Rd. beginning at S. R. 90 in Vienna and exten. toward Americus, F-081-1 (1), Dooly Co., to T. D. Lamb, Jr., Vidalia, $138,130***grading, paving 1.597 mi. Atlanta Expressway beginning approx. 600 ft. north of Lakewood Ave. and ending at University Ave., UI-536 (2-5) Fulton Co., to E. A. Hudson's Sons, Bolton, $497,144***base and surf. 4.713 mi. Jewell to Mayfield Rd., beginning at S. R. 16 in Jewell and ends in Mayfield, S-1568 (1), Hancock Co., to Jefferson Constr. Co. Wadley, $72,893***base and surf., bridge 8.096 mi. at Town Creek on Calhoun to Spring Place Rd., beginning at S. R. 3 approx. 1.5 mi. north of Calhoun and ending at Murray Co. line, S-0924 (1), Gordon Co., to J. C. Kay, Calhoun, $227,105***base and surf. 4.321 mi. Forsyth to Musella Rd., beginning at S. R. 7 in Musella and ending at present pavement north to Crawford-Monroe Co. line, S 0764 (2), Monroe and Crawford Counties, to Crummey & Crummey, Rochele, $146,363***base and surf., bridge 5.112 mi. Stock bridge to Conyers Rd., beginning at S. R. 155 and ending S. R. 212, S 0868 (1), Henry and Rockdale Counties to R. T. Smith, 982 Lullwater Rd., Atlanta, $175,704***base and surf. 5.339 mi. Albany to Cordele Rd., beginning near the Crisp Co. line and exten. toward Albany, S 0944 (1), Worth Co., to Glen G. Searing Co., 2225 Broadway, Jacksonville, Fla., $91,285***base and surf. 4.999 mi. Naomi to Rock Springs Road, S-133 (1), Walker Co., to W. L. Cobb Constr. Co., Decatur, $57,752*** base and surf. 5.742 mi. Alamo to Dublin Rd., beginning at end of pavement approx. 4 mi. northwest of Alamoand end of S. R. 46, 50580 (2), Wheeler and Laurens Counties, to Holland Constr. Co., Mt. Vernon, $59,856. Bids 9/29. Grand total $1,466,232. CD 9/21.

Kan., Wichita—City, street imprvs., to Globe Constr. Co., 1040 N. Water St., $126,000. Bids 9/19.

Maryland—State Rds. Comn., Baltimore, Zone 2, grav. 1.159 mi., divided hy. imprvs., Contr. M 435-2-315, Montgomery Co., to Wilmoth Paving Co., First and P Sts. S. E., Wash., D. C., $556,864. CD 9/19 under LB.

▲ **New Mexico**—State Hy. Dpt., Santa Fe, grading, one multiple concrete box culvert over 20 ft. clear span, 509 ft., concrete steel bridge, hot plant asph. surf., asph. and stone chips sealing, etc. 12.221 mi. U. S. 66 between San Jon and Texas State Line, FAP No. FI-127 (14), Quay Co. to Jack Adams, Box 58, Santa Fe, $688,301***grading, 3 multiple con-

crete box culverts, each over 20 ft. clear span, three 156 in. sectional plate culverts, bit. top course surf., asph. and stone chips sealing, etc. 10.523 mi. U. S. 64 between Eagle Nest and Cimarron FAP No. F-154 (5), Colfax Co., to Lowdermilk Bros., Box 4150, Denver 9, Colo., $582,137***grading, bit. top course surf 1.516 mi. U. S. 85 between Maxwell and Springer Colfax Co., to D. D. Skousen, 201 Springer Bldg., Albuquerque, $94,642***grading, asph. processed base, asph. and stone chips sealing, 5.829 mi. SR. 20 between Fort Sumner and Roswell FAP No. S-77 (5), Chaves Co., to Skousen-Hise Contrg. Co., 207 Springer Bldg., Albuquerque, $115,135. Grand total $1,472,-214. Bids 10/6.

▲ Oklahoma—State Hy. Dpt., Capitol, Oklahoma City, Zone 5, to Ryan-Richards Co., 1401 N. W. 5 St., Oklahoma City, Zone 6, stabil. aggregate base, single bit. surf. 8 mi. State Hy. 40 near Morrison, Payne Co., $104,292. est. $105,510; stabil. aggregate base, single bit. surf. 3.69 mi. State Hy. 40 near Morrison, Payne Co., $62,098. est. $62,560***to Tex Baughman Co., 4000 N. W. 9 St., Oklahoma City, Zone 7, caliche base, double bit. surf. course 8.298 mi. U. S. 270 near Beaver, Beaver Co., $215,502. est. $220,480***to Clark Constr. Co., Pawnee grading minor structures, 8 mi. State Hy. 40, Payne Co., $69,496 est. $83,277***to Public Constr Co., Barnes Bldg., Muskogee, stabil. aggregate base, double bit. surf. 3.837 mi. U. S. 59, Cherokee Co., $77,885, est. $95,322; stabil. aggregate base, double bit. surf. 6.452 mi. U. S. 59, Cherokee Co., $135,998, est. $159,500***to Amis Constr Co., 1647 Exchange St., Oklahoma City, Zone 8, grading, drainage, minor structures 6 bridges 3.837 mi. U. S. 59, Cherokee Co., $163,445, est. $172,375; c. conc. 1.11 mi. U. S. 60 urban route south of Ponca City, Kay Co., $217,213. est. $222,-213; c. conc. 0.92 mi. U. S. 60 urban route south of Ponca City, Kay Co., $82,739, est. $89,115; c. conc. 0.965 mi. U. S. 60 urban route south of Ponca City, Kay Co., $54,276, est. $57,265; c. conc. 2.818 mi. U. S. 60 east of the Arkansas River, Osage Co., $138,499, est. $149,178 to Stamey Constr. Co., Altus, grading, stabil. base 0.262 mi. U. S. 60 By Pass route at Ponca City, Kay Co. $68,109, est. $83,092; grading, drainage, minor structures 2.818 mi. U. S. 60 east of the Arkansas River, Osage Co., $96,445, est. $111,957***to R. W. Hammock, Van Buren, Ark., grav. surf., and one bridge 5.904 mi. U. S. 59 near Wister, LeFlore Co., $134,184, est. $152,569***to W. E. Logan & Sons, Barnes Bldg., Muskogee, grading, drainage, minor structures two bridges 0.471 mi. U. S. 75 near Kowa, Pittsburg Co., $108,476, est. $109,934*** to Layman & Sons, Riverside Dr., Tulsa, stabil. aggregate base, double bit. surf. 6 mi. U. S. 59, south of Sallisaw, Sequoyah Co., $155,601 est. $193,800***to G. E. Kerk, Fairview, grading, drainage, 8.007 mi. Route 8, north of Watonga, Blaine Co., $124,747 est. $140,300***to Gaines & Son, Miami, grading, drainage, minor structures 4.792 mi. No. 51 west of Wagoner, Wagoner Co. $73,866, est. $87,030. Grand total $2,082,871. CD 9/27.

Tex., Kountze—Hardin Co., Court House road and street surf. in Silsbee. Approx. $100,000; hard surfaced roads in Dist. 4, Silsbee area $90,000 force account CD 9/16/49.

EARTHWORK, WATERWAYS

BIDS ASKED

B. C., New Westminster—B.A. 10/25—Acting Secy., Dpt. P. Wks., Hunter Bldg., Ottawa, Ont., impry. Fraser River, Port Mann Channel. $150,000. Plans deposit $25. R. Blais, c/o owner, engr.

Minn., Breckenridge—B.A. 10/27—Wilkin Co., E. Anderson, aud., County Ditch 37, 87,822 cu. yd. excav. and leveling spoil banks, 5,566 cu. yd. excav. and haul, furnish, install 608 ft. 36- to 54-in. concrete culverts jacked under Trunk Hy., 634 ft. 36 and 48 in. corrugated metal culverts, etc. $33,298

† California—Bids Asked—U. S. Eng., Wright Bldg., Sacramento, levee construction on Deer Creek, Spec. 1469. Extended date.

CONTRACTS AWARDED

Ont., Hamilton—Dpt. P. Wks., Hunter Bldg., Ottawa, dredging in harbor, to The J. P. Porter Co. Ltd., 1010 St. Catherine St. W., Montreal, Que. Approx. $623,-700. Bids 9/13. CD 9/19, under LB.

AIRPORTS

CONTRACTS AWARDED

Ont., Ottawa—AIRPORT REPAIRS—Dpt. National Defense, Ottawa, Ont., repairs to R.C.A.F. bldgs at Uplands Airport, to Dorsin Constr. Co., Ltd., 5 Concord St., Ottawa, Approx. $571,500. CD 4/15/47.

PUBLIC BUILDINGS

BIDS ASKED

Conn., Middletown—LAUNDRY SERVICE—B. A. 10/23—State, R. S. Thatcher, comptroller, State Capitol, Hartford, masonry, structural steel laundry service bldg., State Hospital, BA-1-70. $300,000. Plans deposit $25. CD 10/17/49.

Ill., Flossmoor—SCHOOL—B.A. 10/24—Dist. 161, Western Ave. and Vardon Pl., school, $285,000. Childs & Smith, 20 N. Wacker St., Chicago, Zone 6, archts.

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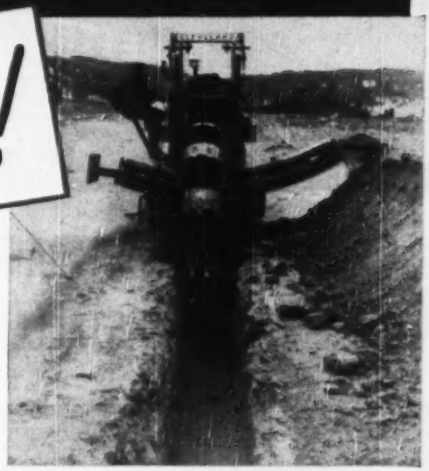

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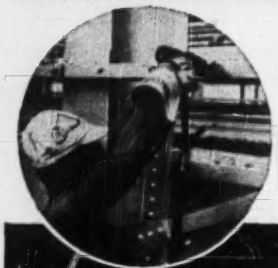

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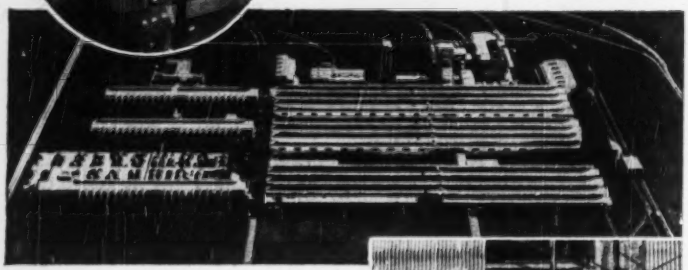

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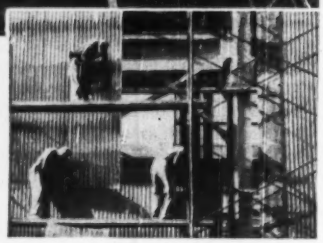

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N. C., Marion—HOSPITAL—B.A. 10/24—City, hospital. J. E. Sirrine & Co., 215 Main St., Greenville, S. C., archts. CD 10/5.

N. C., Raleigh—THERAPY and INDUSTRY—B.A. 10/24—At office Roy M. Purser, genl. bus. mgr., State Hospital Bd. of Control, Raleigh, 2 story, rein.-con. 326,000 cu. ft. recreational occupational therapy and industry bldg. Plans deposit $25 general constr., $10 each mechanical work. Extended date. McMinn & Norfleet, 233½ N. Green St., Greensboro, archts. CD 9/18.

Pa., Phila.—POLICE and FIRE HOUSE—B.A. 10/24—Dpt. Pub. Safety, City Hall, police and fire house, Ridge Ave. $350,000. Max W. Bieberbach, Jr., 843 N. 19 St., archt.

▲ **N. Y., White Plains**—APARTMENT—B.A. 10/25—White Plains Housing Auth., 11 William St., Winbrook Apartment. $1,500,000. Plans deposit $50. CD 7/9/47.

Pa., Montoursville—BARRACKS—B. A. 10/25—General State Auth., 8 and Herr Sts., Harrisburg, general contract grading and paving; heating; plumbing; electrical work for barracks and examination field for the Pennsylvania State Police. $250,000. Plans deposit $10. each. Clarence Wagner, 475 William St., Williamsport, archt. A. F. Jones, c/o owner, ch. engr. CD 2/2.

† **Va., Norfolk**—BUILDING ALTERATIONS—B. A. 10/25—P. Wks. Office, Headquarters, Fifth Naval Dist., U. S. Naval Base, Zone 11, altering Building HB-24 at U. S. Naval Base, Spec. No. 25179. Plans deposit $10.

† **Ala., Camp Rucker**—TRAINING AIDS—B. A. About 10/26—U. S. Eng., P. O. 1169, Mobile, 7, Ala., rehabilitation of training aids at Camp Rucker, Ozark, Serial No. Eng 01-076-51-39.

▲ **Mass., Randolph**—SCHOOL—B.A. 10/27—Town, School Plan & Bldg. Comn., Clark W. Freeman, chn., brick, concrete Junior Senior High School, $1,305,000. Plans deposit $50. Harry J. Korslund, 506 Washington St., Norwood, archt. CD 10/2.

▲ **Minn., Duluth**—PHYSICAL EDUCATION—B. A. 10/27—University of Minnesota, R. S. Callaway, purch. agt., 323 Admin. Bldg., Main Campus, Minneapolis, physical education bldg. at Duluth Branch of University of Minnesota. $1,000,000. Plans deposit $25. A. R. Melander, 603 Alworth Bldg., archt. CD 5/19/49.

Ill., Moline—SCHOOL—B.A. 10/30—Bd. Educ., 1619 11 Ave., Thomas Jefferson School. Swanson & Mainwald, 501 15 St., archts. CD 10/17/47.

▲ **Tex., Amarillo**—HOSPITAL—B.A. 10/30—Potter Co., 5 story, masonry Northwest Texas Hospital addn., nurses home addn. and new boiler plant. $1,500,000. Plans deposit $100. CD 8/4.

Calif., Yountville—VOCATIONAL TRAINING CENTER—B. A. 10/31—State Div. Architecture, P. Wks. Bldg., Sacramento, 2 rein.-con., 19,600 sq. ft. vocational training center units at Veterans Home. Plans deposit $25. Anson Boyd, Sacramento, state archt. CD 8/8.

▲ † **N. M., Los Alamos**—BUILDINGS—B.A. 10/31—U. S. Atomic Energy Comn., Los Alamos, Group 140-TA-16, Proj. F, concrete buildings, Inv. No. 291-51-25. $1,000,000-$1,250,000. Plans deposit $50.

N. Y., Dansville—HOSPITAL—B.A. 10/31—Dansville General Hospital, Dansville, hospital alterations, addns. $560,000. Kaelber & Waasdorp., 311 Alexander St., Rochester, archts.

Tex., Kaufman—SCHOOL—B. A. 10/31—Kaufman Independent School Dist., Kaufman, school, auditorium, cafeteria. $250,000. Arnold E. Wittmann, 804 E. 45 St., Austin, archt. CD 5/26.

Tex., Port Arthur—SCHOOL—B.A. 31—Port Arthur Independent School Dist., Port Arthur, 15-room elementary school, gymnasium and shop bldgs. for high school. Approx. $265,000. Plans deposit $15 general constr.; $10 mechanical work. Mark Lemon, 1210½ Main St., Dallas, arcnt. CD 10/2/47.

Okla., Lawton—HIGH SCHOOL—B.A. 11/1—Bd. Educ., Lawton, Negro High School. $250,000. Paul Harris, Chickasha, archt. CD 11/26/48.

LOW BIDDERS

Conn., New Britain—HALL—State, R. S. Thatcher, comptroller, State Capitol, Hartford, Sept. 26, brick, steel Contr. Henry Barnard Hall, B/A-R-64, from Associated Constr. Co., 1010 Wethersfield Ave., Hartford, $961,711. CD 9/19.

Del., Dover—SCHOOL—Delaware State Bd. Educ., Dover, Sept. 27, general contract high school, from Rupert Constr. Co., 3499 Lancaster Ave., Wilmington, $760,000. CD 9/18.

Ind., Gary—POLICE and CITY COURT—Bd. P. Wks., Mayor E. H. Swartz, chn., City Hall, rejected bids Oct. 5, police and city court bldg., L. B. $940,425. Est. $700,000. CD 9/21.

Md., Baltimore—SCHOOL—Baltimore Co. Bd. Educ., Towson, Zone 4, Sept. 26, 1 story, part bsmnt., 185x300 ft., brick, cinder block, steel Maiden Choice Elementary School, Wilkins Ave. and Maiden Choice Lane, near here, from Lawrence Constr. Co., 2503 St. Paul St., Zone 18, $572,777. CD 9/13.

▲ **Md., Baltimore**—COURT HOUSE—City, Bureau Bldg. Constr., 410 Municipal Bldg., Zone 2, rejected bids Oct. 4, 6 story court house addn. alterations, L. B. $2,193,353. Egli & Gompf, Inc., 1019 N. Calvert St., Zone 2, mech. engrs. Faisant & Hooken, 2017 Maryland Ave., Zone 18, struct. engrs. CD 9/20.

Md., Owings Mills—COTTAGES—State, Dpt. P. Imprvts., 506 Park Ave., Baltimore, Zone 1, Oct. 5, interior alterations to Wyse and Thom Cottages, Rosewood

State Training School, from Henry A. Knott, Inc., 2107 N. Charles St., Baltimore, Zone 18, $565,000. Henry Powell Hopkins, 10 E. Mulberry St., Baltimoer, Zone 2, archt. CD 1/19.

▲ Neb., Lincoln—AUDITORIUM—City, City Hall, Oct. 4, general contract municipal auditorium, from Olson Constr. Co., 410 S. 7 St., $1,711,656; plumbing, heating, ventilating, refrigeration, from Natkin & Co., 1119 Stewart St., $497,700. CD 9/11.

▲ N. Y., Auburn—HOUSING—Auburn Municipal Housing Auth., Auburn, Oct. 3, 118 unit garden apartment, Thornton Ave. and Garrows St., from William E. Bouley Co., Inc., Auburn, $1,101,000. CD 9/14.

N. Y., Bonneville—SCHOOL—Bd. Educ., Bonneville, Sept. 29, Central School addn., from I. E. O. A. Slutzki, Hunter, $618,606. CD 9/19.

N. Y., Brooklyn—SCHOOL—Bd. Educ., 49 Flatbush Ave., Zone 1, Oct. 6, general contract addns. to P. S. 199, Elm Ave. between E. 12 St. and Coney Island Ave., from Colmar Constr. Co., 364 Gold St., Zone 1, $763,000.

▲ N. Y., Brooklyn—SCHOOL—Supt. School Bldgs., Design & Constr., 49 Flatbush Ave. exten., Zone 1, Oct. 4, P. S. 273, Cozine Ave. from Jerome to Warwick Sts., from Carnilo Constr. Co., 26 Court St., Zone 2, $1,145,000. CD 9/18.

▲ N. Y., Middletown—POWER PLANT—Bureau Contracts & Accounts, Albany, Oct. 4, general contract power plant, Middletown Homeopathic Hospital, from L. B. Strandberg & Sons, Inc., 608 S. Dearborn St., Chicago, Ill., $1,199,750***heating, from The Interboro Co., 235 E. 34 St., New York, Zone 16, $712,000***electrical work from Arc Electric Constr. Co., Inc., 739 Second Ave., New York, Zone 16, and Herbert G. Martin, Inc., 77 Hawthorne Ave., Yonkers, $742,420. CD 9/14.

N. C., Charlotte—HOSPITAL—Bd. Directors of Mercy Hospital, 1400 Scott Ave., Oct. 5, general contract hospital addn., from J. A. Jones Constr. Co., 209 W. 4 St., $597,800. CD 7/28.

▲ Pa., Upper Darby—HIGH SCHOOL—Upper Darby Bd. Educ., general contract high school addns., alterations, from Wark & Co., 1920 Sansom St., Phila., $1,462,540. CD 9/6.

Va., Dublin—HIGH SCHOOL—Town, Dublin High School, from Trinkle & Dobyns, Dublin, $892,470. CD 9/11.

Wis., Eau Claire—LABORATORY—Bd. Regents of Normal Schools, Madison Oct. 4, general contract laboratory at State Teachers College, from L. G. Arnold Inc., N. Dewey and Galloway Sts., $998,300. CD 9/20.

CONTRACTS AWARDED

▲ Fla., Lakeland—HOUSING—Lakeland Housing Auth., Lakeland, 220 housing units, to C. A. Fielland, Inc., 107 N. Rome Ave., Tampa, $1,614,157. Bids 8/11. CD 8/16, under LB.

▲ Fla., Orlando—HOUSING—Orlando Housing Auth., Orlando, 209 unit Lake Mann Homes, Proj. FLA-4-4, to J. Hilbert Sapp, West Palm Beach, $1,694,990. Bids 9/28. CD 10/9, under LB.

Ga., Thomasville—HOUSING—Thomasville Housing Auth., Thomasville, 96 housing units, to Jack Culpepper, 113 W. Park Ave., Tallahassee, Fla., $755,000. Bids 8/29. CD 9/7, under LB.

Ia., Waterloo — SCHOOL — Independent School Dist., Waterloo, general contract Junior High School, to Jens Olesen & Sons, Waterloo, $956,486. Bids 9/27. CD 8/24.

Mass., Wareham—SCHOOL—Town of Wareham, Town Hall, high school off Marion Rd., to John Capobianco, 44 School St., Boston, $845,401. Awarded 9/28. CD 9/19, under LB.

† Mich., Battle Creek—BUILDINGS—Dpt. Army, Fort Custer, reconstr. bldgs., roads, utilities, facilities at Fort Custer. Owner builds, $900,000. CD 9/26.

▲ Mich., Holland—POWER PLANT—City, City Hall, power plant addn., to David L. Green Constr. Co., Fairview St., Muskegon, $1,250,000. Awarded 9/27.

† Mich., Sault Ste Marie—HOSPITAL—Dpt. Army, Sault Ste Marie, hospital, incl. mess hall, barracks, 5 sheds to house equip., Ryan Ave., to Champion, Inc., Iron Mountain, $800,000.

▲ N. Y., Buffalo—HOUSING—Buffalo Municipal Housing Auth., City Hall, Dante Place Housing, to John W. Cowper Co., 775 Main St., Buffalo, and Corbetta Constr. Co., 220 E. 42 St., New York, Zone 17, $4,113,400. Bids 9/15. CD 9/26, under LB.

N. Y., Wayland—HIGH SCHOOL—Bd. Educ., School Dist. 1, Wayland, Junior and Senior High School, to Matthew L. Carroll, Inc., 101 Park Ave., New York, Zone 17, $577,000. Bids 9/21. CD 9/12.

▲ Pa., Reading—COUNTY HOME—Comrs., Berks Co., 6 and Court Sts., general contract county home, to Edward A. Reider, 110 S. 4 St., $1,345,000. Bids 9/14. CD 9/21, under LB.

Va., Richmond—SCHOOL—City, Mary Munford School to Thorington Constr. Co., 205 E. Canal St., $820,153. CD 10/9, under LB.

COMMERCIAL BUILDINGS

BIDS ASKED

Md., Baltimore—CHURCH—B.A. 10/24—St. Anthony of Padua R. C. Church, 4614 Frankford Ave., 2 story, brick, steel, concrete church, 4440 Frankford Ave., $300,000, Gaudreau & Gaudreau, 330 N. Charles St., archts.

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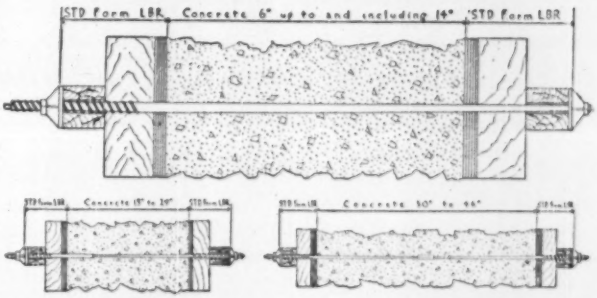
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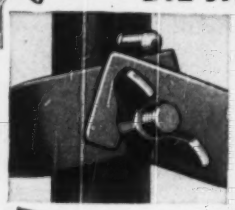

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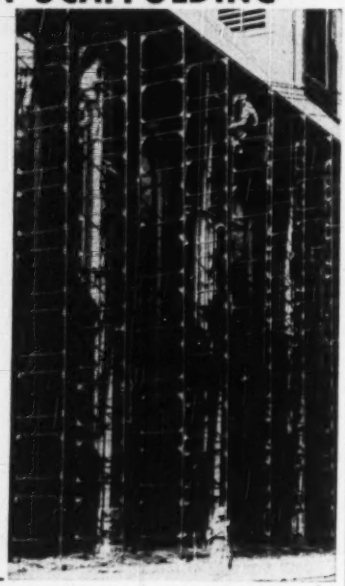

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N. Y., New York—CONVENT—B.A. 10/24—St. Simon Stock Church, Rev. M. Daly, 2191 Valentine Ave., Zone 57, 4 story convent, Ryer Ave. north of 182 St. Anthony J. DePace, 151 W. 46 St., Zone 19 archt. CD 6/9.

Wis., New London—HOSPITAL—B.A. 10/24—Religious Hospitalliers of St. Joseph, New Kingston, Ontario, Canada, 3 story part bsmnt., 65x70 ft., concrete, steel, brick occupant-community hospital addn. $300,000. E. A. Stubenrauch, 708 Erie Ave., Sheboygan, archt. CD 9/6.

N. C., Marion—HOSPITAL—B.A. 10/27—Marion General Hospital, S. R. Cross, chn., Marion, 60 bed hospital. Plans deposit $50. J. E. Sirrine Co., Engineers, 215 S. Main St., Greenville, S. C., engrs.

▲ N. Y., Ithaca — BUILDING — B.A. 10/31 — Cornell University, Ithaca, Anabel Taylor Hall United Religious Work Bldg., $1,500,000. Extended date. Starrett, Van Vleck & Marsh, 267 Fifth Ave., New York, Zone 16, archts. CD 7/20.

Utah, Tooele—HOUSING—Bids Asked—Dpt. of Army, South Pacific Div., Oakland Army Base, Oakland 14, Calif., construct, manage and finance, 25 housing units at Tooele Ordnance Depot; and 53 housing units at Utah General Depot.

SOON LETS CONTRACT

▲ Pa., Phila.—APARTMENT—Mr. & Mrs. Donald D. Dodge, 32 Summit St., soon lets contract apartment development, Mermaid Lane., $2,000,000. Oscar G. Stonorov, Broad St. Station Bldg., archt. CD 9/26.

LOW BIDDERS

▲ Ark., Fort Smith—HOSPITAL—St. Edwards Hospital, 1411 Rogers St., hospital addns., from Harmon Constr. Co., 100 S. Indiana St., Oklahoma City, Okla., $1,260,000. CD 9/13

▲ Md., Baltimore—HOSPITAL—Associated Jewish Charities, Monument and Eutaw Sts., Oct. 4, 2 story, bsmnt., 44x230 ft. and 44x57 ft., brick, steel, concrete, T-shaped Mt. Pleasant Hospital for Pulmonary Diseases, Belvedere and Greenspring Aves., from John K. Ruff Co., 100 W. 22 St., $1,082,400. Est. $750,000. CD 9/19.

Tex., Abilene — CHURCH SANCTUARY — First Baptist Church Congregation, 232 Hickory St., received no bids Oct. 6, 2 story, 90x134 ft., concrete bsmnt., brick structural steel church sanctuary, concrete p er and beam fdn. Revised plans. $500,000. CD 8/21.

Tex., El Paso—CHURCH, etc.—First Baptist Church, 805 Montana St., Oct. 3, church addn., auditorium from C. H. Leavell, 1900 Wyoming St., $166,615, mechanical $72,000, total $538,615. Est. $275,000. CD 9/26.

CONTRACTS AWARDED

Conn., Hamden—CONVENT, etc.—Missionary Zelatrius of Sacred Heart, Hamden, 5 story, brick, steel, concrete convent and school, to Mott-Mohr Constr. Co., Inc., 15 Mead St., New Haven. Approx. $765,000. Bids 9/6, awarded 9/20. CD 8/28.

▲ Conn., New Haven—OFFICE—Security Insurance Co., 175 Whitney Ave., 3 story (ultimately 7 story) penthouse, brick, steel, concrete office, Whitney Ave., to W. J. Megin, Inc., 51 Elm St., Naugatuck. Approx. $2,000,000. CD 4/14.

▲ D. C., Wash.—OFFICE—National Association of Letter Carriers, 1525 H St. N. W., office, to Hauser Constr. Co., 1909 Chestnut St., Phila., Pa., $1,259,521. Bids 8/4. CD 8/16, under LB.

▲ Ky., Camp Campbell—HOUSING—Midwest Mortgage Co., 2545 S. Third St., Louisville, Zone 3, 1 and 2 story, 106 unit brick, hollow tile, housing, to Algernon Blair, First National Bank Bldg., Montgomery, Ala., $2,800,000. Awarded 10/2.

La., Shreveport—HOMES—Sunset Acres Development Co., c/o contractor, 108 homes, to Southland Constr. Co., Shreveport, approx. $580,000.

Md., Chillum (Br. Hyattsville)—SCHOLASTICATE—Oblates of St. Francis de Sales, 907 Michigan Ave. N. E., Wash., D. C., 3 story 213x220 ft., brick, limestone, U-shaped, concrete scholasticate, Eastern Ave. and Sargent Rd., to Parkhill Constr. Co., 3308 14 St. N. W., Wash., D. C., Approx. $800,000. Gleeson & Mulrooney, 1612 Market St., Phila., Pa., archts.

N. Y., Jackson Heights—APARTMENT—Bradford House, Inc., c/o Philip Birnbaum, archt., 12 E. 48 St., New York, Zone 17, 6 story apartment, 86 St., south of 37 Ave. Owner builds. Approx. $850,000.

N. Y., Jackson Heights — APARTMENT — Juno Realty Corp., c/o Philip Birnbaum, archt., 12 E. 48 St., New York, Zone 17, 6 story apartment, 35 Ave. between 80 and 81 Sts. Owner builds. $750,000. CD 8/24.

▲ N. Y., Jackson Heights — APARTMENT — Somerset-Wilshire Apartments, c/o Philip Birnbaum, archt., 12 E. 48 St., New York, Zone 17, 6 story apartment, 35 Ave. between 74 and 75 Sts. Owner builds. $1,125,000. CD 8/24.

▲ N. Y., New York — APARTMENT — Gracie Square Constr. Corp., 332 E. 149 St., Zone 51, apartment, 138-18 East End Ave. Owner builds. $1,650,000. CD 6/29.

▲ N. Y., Rego Park — APARTMENT — Ballan Realty Corp., c/o Philip Birnbaum, archt., 12 E. 48 St., New York, Zone 17, 12 story apartment, 102 St. from 64 Rd. to 65 Ave. Owner builds. $1,250,000. CD 6/15.

▲ N. D., Grand Forks—HOSPITAL—St. Michaels Hospital, Grand Forks, hospital, to McGough Bros., 1954 University Ave., St. Paul, Minn., $3,000,000. CD 6/9/47.

Pa., Phila.—HOUSING—American Friends Service Com., 20 S. 12 St., housing development (Brown St., etc.),

to Uncefer Bros. Constr. Co., 112 S. 16 St., $800,000. Oscar Stonorov, Broad St. Station Bldg., archt.

▲ Pa., Phila. — RESIDENCES — Hyman Korman, 6033 Castor Ave., residential development, Revere Ave., separate contracts. $1,000,000.

Tex., Houston—CHURCH—Christ Episcopal Church, Texas Ave. and Fannin St., church, to American Constr. Co., 410 Rusk Bldg., $506,119. CD 10/9, under LB.

Tex., Houston—DWELLINGS—Wesleyan Plaza Co., 1015 W. Gray St., 88 dwellings, own forces. $605,000. CD 9/27.

Tex., Houston—DWELLINGS—Hugh Wilkin, c/o W.Ikin Lumber Co., 2302 Danville St., 50 high type dwelling, southwest sect. off Brays Bayou. Owner builds. Approx. $575,000. CD 9/29.

▲ Va., Fort Belvoir—HOUSING—Commanding Officer, Military Dist. of Wash., D. C., construct, finance and manage 350 unit two story brmnt., brick apartment structures just off U. S. Route 1 below Woodawn sect. Lewis Heights Corp., 710 N. Wayne St., Arlington, sponsor will build. Approx. $3,000,000. Awarded 9/28. Mills & Petticord, 3308 14 St. N. W., Wash., D. C., archts. CD 10/27/49.

Que., Buckingham—HOSPITAL—Hospital St. Nichel, Sister Denis, supervisor, 3 story, 80 bed hospital addn., to Collett Freres Ltd., 178 Parthenias St., Montreal. Approx. $700,000. CD 8/18.

INDUSTRIAL BUILDINGS

BIDS ASKED

R. I., Providence—GARAGE—B.A. 10/23—Kenneth H. Earle, 216 Turks Head Bldg., (selected list bidders) post office garage addn. $100,000. Dwight Seabury Co., 188 Main St., Pawtucket, archt. CD 8/29.

La., Bossier City—PLANT—Bids Asked—United Gas Pipe Line Co., 1525 Fairfield Ave., Shreveport, dehydration plant, near here. $863,000. CD 9/29.

▲ La., Lake Charles—REFINERY—Bids Asked—Continental Oil Co., Oil & Gas Bldg., Houston, Tex., doubling capacity refinery for mfg. high-octane gasoline and catalytic cracking unit, $10,000,000; pipe line units in refinery area, $450,000. CD 10/5.

La., Monroe—GAS COMPRESSOR STATION—Bids Asked —United Gas Pipe Line Co., 1525 Fairfield Ave., Shreveport, gas compressor station, near here. $750,000. CD 9/29.

SOON LETS CONTRACT

▲ Pa., Phila.—WAREHOUSE—The Ballinger Co., archt., 121 N. Broad St., soon lets contract warehouse, office bldg. and produce warehouse, for Penn Fruit Co., 1919 Chestnut St. Approx. $1,000,000. CD 9/11.

▲ Pa., West Chester—MANUFACTURING—Wyeth, Inc., 1600 Arch St., Phila., soon lets contract, pharmaceutical mfg. bldg. $1,000,000. Waker Yeomans, 117 S. 17 St., Phila., engr. CD 10/4.

CONTRACTS AWARDED

La., New Orleans—GARAGE—Owner, c/o contractor, garage, at 1730 Canal St., to Shelby Constr. Co., 4320 Paris Ave., Approx. $550,000.

Pa., Phila.—GARAGE—Owner, c/o Thalheimer & Weitz, archts., 1325 Walnut St., 2 story, bsmnt., 90x300 ft., rein.-con. garage, to Work & Co., 1920 Sansom St., $500,000. Bids 9/1. CD 8/31.

▲ Pa., Phila.—FACTORY, etc.—Paper Mfg. Co., S and Willow Sts., 1 story, 200,000 sq. ft., face brick, block factory and office, to Industrial Operations, Inc., 966 N. Meridan St., Indianapolis, Ind., $1,200,000. Herbert A. Bogart, 966 N. Meridian St., Indianapolis, Ind., engr.

▲ Pa., Phila.—PLANT and OFFICE—Paper Mfgs. Co., S and Willow Sts., design and construction mfg. plant and offices, to Industrial Operations, Inc., 966 N. Meridian St., Indianapolis, Ind., $1,500,000. CD 9/7.

▲Tex., Orange—PLANT—Jefferson Lake Sulphur Mining Co., Jefferson Lake, via Orange, sulphur mining plant, own forces. $2,500,000.

▲ Tex., Sweeney—REFINERY—Phillips Petroleum Co., City Natl. Bank Bldg., Houston, design and construction refinery remodeling and addns., to C. F. Braun Co., 1000 S. Fremont Ave., Alhambra, Calif., Approx. $2,250,000. CD 10/19.

▲ Wash., Spokane — RECTIFIER BLDG., etc. — Kaiser Aluminum & Chemical Corp., 1924 Broadway, Oakland, Calif., 3 story, 35x144 ft. steel, brick rectifier bldg. addn., two 72x80 ft. steel potline bldgs., steel storage bldg., one 29x51 and two 20x50 ft. brick office bldgs., 80x460 ft., carbon baking furnace bldg., 4 story carbon press bldg. all at Mead reduction works, to Kaiser Engineers, Inc., 1924 Broadway, Oakland, Calif., $3,700,000. CD 7/28.

Ont., Toronto—PLANT UNIT—Canadian Acme Screw & Gear Ltd., 207 Weston Rd., first unit of program, 1 story, 180x600 ft. plant, in North York Twp., near Dufferin St. and Snyder Ave., to A. W. Robertson Ltd., 57 Bloor St. W. Approx. $600,000. A. G. Facey, archt., and E. A. Cross, engr., both 991 Bay St.

UNCLASSIFIED

BIDS ASKED

Nebraska—RURAL DISTRIBUTION LINES—B. A. 10/24 —Panhandle Rural Electric Membership Assn., Alliance, 332.3 mi. rural distr. lines, Arthur, Cherry,

News about steel

FROM U·S STEEL SUPPLY

GRAY MARKET ??

● BENJAMIN F. FAIRLESS, President of United States Steel Corporation, recently re-affirmed the sales policy of the Corporation and all its subsidiary companies. He said: "Corporation policy . . . continues to be to sell steel *only to bona-fide customers* at *regular* published prices. We will decline to make sales to any purchaser who is found to have resold in the gray market, steel bought from the Corporation."

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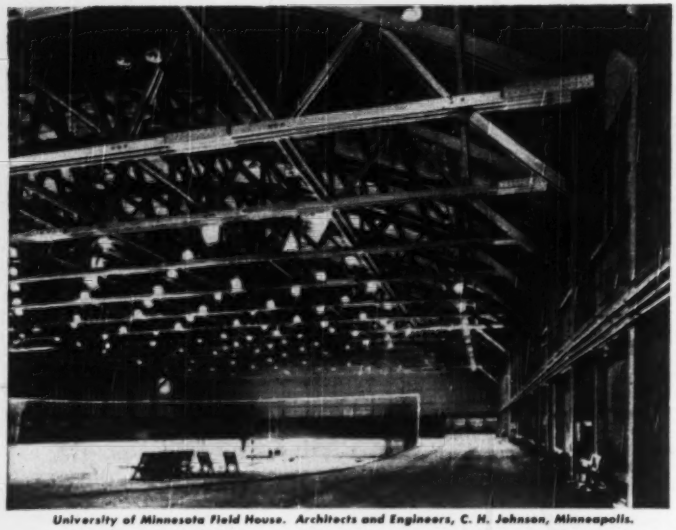

University of Minnesota Field House. Architects and Engineers, C. H. Johnson, Minneapolis.

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Garden, Grant, McPherson and Sheridan Counties. $350,000. Raymond H. Reed & Co., Columbus, engrs. CD 9/18.

Georgia—RURAL DISTRIBUTION LINES—B.A. 10/25—Coastal Electric Membership Corp., Midway, 42.11 mi. rural distr. lines in McIntosh, Liberty and Bryan counties. Plans deposit $10. Paterson & Dewar, Rutland Bldg., Decatur, engrs. CD 8/27/48.

Nebraska—RURAL DISTRIBUTION LINES—B. A. 10/25—Eastern Nebraska Public Power Dist., Syracuse, 72 mi. rural distr. lines, Sarpy, Cass, Otoe, Nemaha and Richardson Counties. $150,000. Henningson Eng. Co., Standard Oil Bldg., Omaha, engr. CD 5/19/48.

Pennsylvania—PARK IMPRVS.—B. A. 10/25—General State Auth., 18 and Herr Sts., Harrisburg, general contract, heating, plumbing, electrical work for construction public buildings and imprvs. to lakes at French Creek State Park, Berks Co. $300,000. Plans deposit $7.50 each. John H. Lynch, c/o owner, archt. A. F. Jones, c/o owner, ch. engr. CD 1/30.

† **Arizona-Nevada**—GENERATOR CONTROL CUBICLES, etc.—B.A. 10/26—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., furnish, del. f.o.b. cars shipping point or f.o.b. cars Boulder City, Nev., control cubicles, control board, control terminal board addn., terminal board exten., switchyard relay board for Units A-3, A-4 and A-9, Hoover Power Plant, Boulder Canyon Proj. Spec. DS-3203. L. N. McClelland, ch. engr.

Nebraska—RURAL DISTRIBUTION LINES—B.A. 10/26—Custer Public Power Dist., Broken Bow, 425 mi. rural distr. lines, Custer, Blaine and Loup Counties. $450,000. Raymond H. Reed & Co., Columbus, engrs. CD 5/16/49.

Nebraska—RURAL DISTRIBUTION LINES—B.A. 10/26—Niobrara Electric Membership Assn., Sheridan 556.3 mi. rural distr. lines, Sioux, Box Butte, Dawes, Sheridan and Cherry Counties. Plans deposit $10. Philip L. Burns, 630 Davenport Bank Bldg., Davenport, Ia., consult. engrs. CD 9/27, under LB.

Wis., Milwaukee—STADIUM—B.A. 10/26—Milwaukee Co. Park Comn., Milwaukee, piling and foundations and county stadium (I) 90,000 lin. ft. piling, 1800 cu. yd. concrete, 56 tons reinforcing steel, (II) 6,400 cu. yd. concrete, 420 tons reinforcing steel, 1220 sq. metal roof 300 sq. alum. siding, 2,000 sq. ft. wire mesh, 1,200 ft. railing, 850 brick, 110 m. glazed tile, 3,700 ft. stone trim, plbg. and lighting. Plans deposit $10 for (I) and $50 for (II). Osborn Eng. Co., 7016 Euclid Ave., Cleveland, O., and E. A. Howard, c/o owner, engrs. CD 2/28.

† **Wyoming**—DISTRIBUTION BOARD, etc.—B.A. 10/26—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., furnishing, del. f.o.b. cars shipping point or f.o.b. cars at Casper distribution board, battery chargers, control board, supply board, for Alcova Switchyard, Transmission Div., Missouri River Basin Proj. Spec. 3187. L. N. McClellan, ch. engr.

Nebraska—RURAL DISTRIBUTION LINES—B.A. 10/30—Cornhusker Rural Public Power Dist., Columbus, 235.3 mi. rural distr. lines, Antelope, Boone, Greeley, Nance and Wheeler Counties. $250,000. Raymond H. Reed & Co., Columbus, engrs.

† **N. C., Camp Lejeune**—OBSERVATION TOWERS—B.A. 10/30—Pub. Wks. Office, Bldg. 1005, Marine Barracks, Camp Lejeune, observation towers at Marine Barracks, Spec. 25553. Plans deposit $10.

† **California**—WATER SCREENS, etc.—B. A. 10/31—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., furnishing, del. f.o.b. cars shipping point or f.o.b. cars Lindsay, Calif., water screens for Lindmore Irrigation Dist., Friant-Kern Canal Distribution System, Central Valley Proj., Spec. DS-3201. L. N. McClellan, ch. engr.

Calif., Napa—EXHIBIT BLDG.—B. A. 10/31—State Div. Architecture, P. Wks. Bldg., Sacramento, 20,000 sq. ft. rein.-con. exhibit bldg., 3,630 ft. floriculture bldg., and 1,500 person rein.-con., steel, grandstand for 35th District Agriculture Assn. Plans deposit $25. Anson Boyd, Sacramento, state archt.

North West Territories—ROCK WORK—B. A. 10/31—Montreal Engineering Co. Ltd., engr., 244 St. James St., Montreal, Que., rock work at Mayo River Power Development, for Govt. of Canada, N.W.T. Comn., Ottawa, Ont. Plans deposit $25. CD 3/28/45.

New Mexico—RURAL DISTRIBUTION LINES—B. A. 11/1—Continental Divide Electric Co-operative, Grants, 227 mi. 14.4/29.9 kv, rural distr. lines, 1500 kva sub-station, McKinley Co. $375,000. Plans deposit $10. Southwest Engineers, Inc., 510 Transit Tower, San Antonio, Tex., engr. CD 10/9, under LB.

† **Texas**—TRANSMISSION LINE—B.A. 11/1—South western Power Admin., Dpt. Interior, D. G. Wright, Admin., Box 1619, Tulsa, Okla., 24 mi. 66 kv H-frame transmisson lines, switch station, 69-KV, at Center, Shelby Co. $225,000. Plans deposit $15.

† **Washington**—STATION FACILITIES—B.A. 11/1—U. S. Eng., 19 E. Poplar St., Walla Walla, station facilities at Plymouth, Berrian, Yellepit and Finley along relocated Spokane, Portland, & Seattle Ry., Benton Co., Serial No. CIVENG-45-16451-22.

CONTRACTS AWARDED

Calif., Los Angeles—ELECTRICAL DISTRIBUTION STATION—City Dpt. Water & Power, 207 S. Broadway, 20,000 kv electrical distr. station for Panarama City. Owner builds. $400,000. S. B. Morris, ch. engr. CD 9/20/45.

Tex., Dallas—TRANSMISSION LINE—Dallas Power & Light Co., Dallas Power & Light Bldg., 13 mi. high-voltage transmission line in "A" sect., force account. Approx. $673,000. CD 9/22.

CONSTRUCTION REPORTS-Third Section

WATER SUPPLY

BIDS ASKED

O., Painesville—B.A. 10/30—City, Paul Cook, mgr., City Hall, 6 new filter beds, 4 new electric driven diesel pumps, 1 standby diesel generating, incl. adding flocculators, 4,500,000 g.p.d. capacity, tear down present garage and replace with vehicle and storage bldg. $600,000. Plans deposit $40. Havens & Emerson, 1140 Leader Bldg., 524 Superior Ave., Cleveland, consult, engrs.

La., Tullos—B.A. 10/31—Town, office of Mayor, Tullos, installing distr. sys. 75,000 gal. steel elevated storage tank, supply main from pump house to elevated tank and constr. pump house with pumps, piping, necessary connections, Mamson & McCain, Inc., 8200 Florida St., Baton Rouge, engr. CD 6/2.

Md., Laurel—B.A. 11/1—City, W. Everett Morton, clk, 379 Main St., 12,000 ft. 12 in. c.i. water mains, appurtenances along State Rte. 198. Plans deposit $5. Whitman, Requardt & Assoc., 1304 St. Paul St., Baltimore, Zone 2, engrs.

LOW BIDDERS

Md., Baltimore—City, Bureau Water Supply, 503 Municipal Bldg., Zone 2, Oct. 4, backfilling over and around approx. 5,600 ft. sub-aqueous 48 in. water main across Baltimore Harbor, from Construction Co. of Maryland, 3001 Druid Park Dr., $244,090. CD 9/28.

Tex., Dallas—City, City Hall, Main and Harwood Sts., Contr. 2, c.i. water mains, Central and S. Lamar Sts., from E. E. Farrow Co., 6109 Forest Park Rd., $164,610. J. T. Conroy, Pub. Wks. engr. CD 6/26.

CONTRACTS AWARDED

Conn., Middletown—City, Bd. Water Comrs., City Hall, pumping station, to Charter Oak Constr. Co., Inc., 525 Main St. Hartford, $72,869; intake chamber approach channel and pipe, to Semenole Constr. Co., Inc., 24 Edison St., East Hartford, $42,000. Awarded 9/20. CD 1/29/47.

Tex., Haskell—City, water lines, force account. $30,000.

Tex., Houston—W. E. Robertson, Trustee for Owner, 1537 Gardenia St., water lines, 80-acre tract between Chocolate Bayou and Mykawa Rd., own forces. $38,000. CD 7/14.

Tex., Houston—Bennie Strickland, 3402 Sunset Blvd., water lines, Owner builds, $46,000. Frank J. Metyko, Scanlan Bldg., engr. CD 9/21.

Tex., Port Arthur—City, c. i. water lines sys. imprvs. force account, $65,000. T. C. Forrest, Jr. Praetorian Bldg., Dallas, engrs. CD 12/8/49.

Tex., San Bentio—City, rehabilitation portion WW sys. own forces. $45,000. CD 6/8.

Wash., Clarkson—Washington Water Power Co., 825 Trent St., Spokane, water filtration plant and sys., day labor, $225,240. W. L. Malony, Symons Bldg., Spokane, engr. CD 5/26.

SEWERS, WASTE DISPOSAL

BIDS ASKED

Va., Hanover—B. A. 10/27—State of Virginia, Welfare & Institutions Bldg., 429 S. Belvidere St., Richmond, sewage treatment plant and connecting sewers at Peaks Industrial School. $51,400. Wiley & Wilson, 905 Peoples Bank Bldg., Lynchburg, engrs.

N. Y., Endwell—B. A. 11/8—Town Bd. of Town of Union Town Office Bldg., 3111 Main St., sanitary sewerage sys. for Endwell Sewer Dist., Sect. I, 4.3 mi. 8- to 24-in. sanitary sewer with appurtenances; Sect. II, approx. 5.7 mi. 8- and 10-in. sanitary sewer with appurtenances; Sect. III, approx. 4.4 mi. 8-in. sanitary sewer with appurtenances Sect. IV approx. 6.4 mi. 8- to 16-in. sanitary sewer with appurtenances, Sect. V, approx. 3.4 mi. 8-in. sanitary sewer with appurtenances. Plans deposit $25. William S. Lozier Co., 10 Gibbs St., Rochester, engr.; adv. ENR 10/19.

LOW BIDDERS

Ark., Newport—Newport Sewer Bd., Newport, primary treatment plant, 2 sewer lift stations, collection lines, from Murray & Ax, Box 2298, Little Rock, $115,618 on pipe. F. H. Morrow, Newport, engr.

Ill., Chicago—Sanitary Dist. of Chicago, 910 S. Michigan St., Zone 5, small technical and utility bldgs. at West Side, North Side, South West Calumet and Chicago River Sewer Works, from Pashen Co., 1406 N. Clybourn St., Zone 10, $376,986.

La., Ferriday—Mayor & Bd., City Hall, Oct. 3, sewerage sys., lift stations and sewage treatment plant, from G. L. Tarlton Constr. Co., W. Park and Manchester St., St. Louis, Mo., $345,000. CD 9/7.

Kan., Arlington—City, received no bids Sept. 15, sewage disposal plant with auxiliaries, appurtenances, etc. $80,000. H. R. Hunter, Deroy Bldg., Wichita, engr. CD 7/19.

Miss., Greenville—City, Oct. 3, sewage pumping stations, Contr. S-1, from Acme Constr. Co., P. O. Box 1424, Mobile, Ala., $145,000. CD 9/19.

Miss., Jackson—City, Oct. 6, Outfall Sewer Proj. 120.5, from Hyde Constr. Co., P. O. Box 385, $236,448. CD 9/27.

Kan., Ellis—City—Sept. 19, sewage plant, from Grundeman Constr. Co., Holton, $102,590. Est $99,473. CD 9/13.

CONTRACTS AWARDED

Mo., Kansas City—City, Wks., City Hall, Zone 6, combination storm and sanitary sewer, 78-81 Sts. from Oak to McGee Sts., to Clarkson Constr. Co., 26 and Jefferson Sts., Zone 3, $184,923. Awarded 10/3. CD 9/28.

† **N. Y., Castle Point**—Veterans Admin., Munitions Bldg., Wash. 25, D. C., sewage treatment plant, grading, plumbing, heating, electrical work, etc., to Robert Young Constr. Co., 5 Station Dr., Hartsdale, $109,307. Bids 8/29, awarded 9/28. CD 9/20, under LB.

Tex., Houston—W. E. Robertson, Trustee for Owner, 1537 Gardenia St., storm sewers, $50,000; sanitary sewers, Approx. $55,000, 80 acre tract between Chocolate Bayou and Mykawa Rd., own forces. CD 7/14.

Tex., Houston—Bennie Strickland, 3402 Sunset Blvd., sanitary sewers. Owner builds, $59,750. CD 9/29.

Tex., Hubbard—City, sanitary sewers, force account. $50,000.

Tex., Longview—Lester Matlock, Longview, storm and sanitary sewers, 116-acre tract on U. S. Hy. 80, 3 mi. east of here, to S. A. Trantham & Assoc. Longview, $50,000 and $57,678 respectively. CD 9/29.

Tex., San Benito—City, rehabilitation portion sanitary sewerage sys., own forces. $60,000. CD 6/8.

Wash., Seattle—Lake City Sewer Dist., c/o Parker & Hill, engrs., Smith Tower, Seattle, Zone 4, 7½ ft. concrete-lined tunnel, 1,100 ft. long from Lake City sewage treatment plant to Lake Washington, to Valley Constr. Co., 7709 Rainier Ave., $188,765. Bids 10/4. CD 9/19.

BRIDGES

BIDS ASKED

STATE HIGHWAY LETTINGS

October 24	November 1
Iowa	California
West Virginia	New York
October 27	November 2
Alabama	Louisiana
Kentucky	Michigan
Pennsylvania	

New Jersey—B.A. 10/31—New Jersey Turnpike Auth., 65 Prospect St., Trenton,

Essex Co.—Contrs. 45, 45A and 45B, incl. construction substructures and superstructures of Oak Island Viaduct and turnpike bridge over Delancey St., etc., Newark. Plans deposit $5. CD 7/13/49, under Streets and Roads.

LOW BIDDERS

Illinois—State Dpt. P. Wks. & Bldgs., Div. Hyt., Springfield, rejected bids Aug. 25, 0.35 mi. 24 ft. concrete pavement on south approach and on connection to old existing pavement at temporary north approach to Cahokia Divers-on Channel Bridge, F. A. Route 4, Dist. 8, Sect. 202X, Proj. F-242 (13), Madison Co., L.B. $69,876. CD 8/14.

Louisiana—State Hy. Comn., Baton Rouge, Oct. 4, grading, small drainage structures, re-in.-con. deck girder bridges, con. pavement approaches 0.94 mi., Bayou D'Arbonne Bridge (near Dubach) on Ruston-Bernice Hy., State Rte. 5, Proj. 23-10-10, F. A. Proj. F 146 (2), Lincoln Parish, from T. L. James & Co., Ruston, $359,623. CD 9/9.

▲ **Tex., Dallas**—Dallas Co. Court House, cancelled bids to have been opened Nov. 4 Forest Ave Bridge and road connections to Bonnie View Rd. $1,722,000. Will re-advertise. CD 10/3.

† **Washington**—Bureau Public Roads, Dpt. Commerce, Morgan Bldg., Portland, Ore., rejected bids Oct. 3, bridge and 2 viaducts on Stevens Canyon Hy., Lewis Co., L. B. $125,765. CD 10/9, under LB.

CONTRACTS AWARDED

▲ **Neb., Bellevue**—Bellevue Bridge Comn., Bellevue, bridge over Missouri River, to Peter Kiewit Sons Co., Omaha Natl. Bank Bldg., Omaha, Condon-Cunningham Co., 4229 Lafayette St., Omaha, and William J. Howard, Inc., 35 E. Wacker St., Chicago, Ill., $1,987,000. CD 8/3.

Wisconsin—State Hy. Comn., Madison hy. structures, West Granville-Waukesha Co. line (South Interchange) Road, U. S. Hys. 41 and 45, Proj. F 03-1 (2), Contr. 1, Milwaukee Co., to William E. Brinkmann, 147 E. Fremont Ave., Elmhurst, Ill., $87,512; hy structures 0.033 mi. Waukesha Co. Line-S. T. H. 60 (Richfield Overhead) Road, U. S. Hy. 41, Proj. FG 03-1 (25), Contr. 1, Waukesha Co., to A. R. Coffeen Co., 906 S. Mill St., Decorah, Ia., $109,292. CD 9/14.

STREETS AND ROADS

BIDS ASKED

STATE HIGHWAY LETTINGS

October 24	Pennsylvania
Iowa	October 31
Maryland	Kansas
Massachusetts	November 1
West Virginia	California
October 27	Delaware
Alabama	New York
Kansas	November 2
Kentucky	California
Minnesota	Louisiana

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New Jersey—B.A. 11/6—New Jersey Turnpike Auth., 65 Prospect St., Trenton.

Gloucester, Camden and Burlington Counties—Contr. 60, constr. about 1¢ mi. four-lane b. conc. or c. conc. interchanges and incidental work in connection with N. J. Turnpike Sect. 2, between Woodbury Heights and Hartford. Plans deposit $5. Gannett, Fleming, Corddry & Carpenter, Inc., 600 N. 2 St., Harrisburg, Pa., engrs. CD 7/13/49.

O., Toledo—B.A. in Spring—Comrs., Lucas Co. Court House, imprv. 1.4 mi. Finzel Rd., Waterville Twp., from Neapolis-Waterville Rd. to Waterville-Swanton Rd. $57,000; imprv. approx. 2 mi. Raab Rd. in Spencer and Richfield Twps., between State Route 246 and West Central Ave. $71,000; imprv. 2.34 mi. Hertzveld Rd. from River Rd. to Neapolis-Waterville Rd., Providence Twp., $92,000. Guy E. Neeper, co. engr. CD 5/11.

LOW BIDDERS

Alabama—State Hy. Dpt., Montgomery, Oct. 6, base and bit. 15.302 mi. road from Greensboro toward Brent, FA-S-15 (3), Hale Co., from A. L. Crow Co., Box 987, Birmingham, $132,564***base and bit. 5.923 mi. from Pettusville south and east to Ardmore-Athens Rd., FA-S-191 (3), Limestone Co., from Dozier Brothers Constr. Co., Mt. Meigs, $57,468***base and surf. 10.355 mi. county road from Wayne to Wilcox Co. line, FA-S 496 (1), Marengo Co., E. J. Cobb Constr. Co., Box 175, Montgomery, $83,439***base and bit. 4.975 mi. from Ala. 63 west to Cow Pens thence southeast to Ala. 63 FA-S-500 (1) and SACP-498-A, Tallapoosa Co., from J. B. Maynard, Alexander City, $51,904. CD 9/27.

Georgia—State Hy. Dpt., Atlanta, Sept. 29, grading, paving, 8.487 mi. State Rt. 61 to State Rt. 92 Rd. beginning at State Rt. 61 approx. 10 mi. south of Dallas and ending at State Rt. 92 approx. 2 mi. south of Hiram, S-0845 (1), Paulding Co., from Knox Bros. Inc., Thomson, $72,536; grading, paving 5.516 mi. Bowdon-Tyus Rd. beginning at end of present pavement in Bowdon and ending at State Rt. 5 at Tyus, S-0844 (2), Carroll Co., from W. L. Robinson Constr. Co., College Park, $71,606. CD 9/21.

Louisiana—State Hy. Dpt., Baton Rouge, Oct. 4, grav. base course or alternate shell base course, small drainage structures, rein.-con. slab span bridge, bit. surf. tr. asph. cement 2.347 mi. Iota-Muxie Hy., Proj. 210-02-04, Acadia Parish, from I. M. Goldberg, Abbeville, $116,355***grav. base course, or alternate shell base course or soil cement base course, bit. surf. tr. (asph. cement) 5.349 Prien Lake Rd., Proj. 810-06-03, Calcasieu Parish, from LeBlanc Brothers, Louisiana National Bank Bldg., Baton Rouge, $226,503***soil cement base course, or alternate type base course, bit. surf. tr. (asph. cement) 4.822 mi., Hot Wells-McNutt Hy., State Rte. 278-D, Proj. 840-10-03, Rapides Parish, from A. A. Caldwell, Reymond Bldg., Baton Rouge, $163,328*** shell base course, bit. surf. tr. (asph. cement) 7.28 mi., Reggie-Shell Beach Hy., State Rte. 32, Proj. 284-02-07, St. Bernard Parish, from W. R. Aldrich & Co., 2493 Baywood Ave., Baton Rouge, $239,595. CD 9/11, 8/31 and 9/19.

Missouri—State Hy. Comn., Jefferson City, Oct. 4, conc. pavement, wid'n. 1.251 mi. Rte. 36, road from Chillicothe east towards Linn Co. line, Proj. F 233 (9) A, and graded earth and 24 ft. conc. pavement 0.797 mi., Rte. 65 road in Chillicothe, Proj. U 287 (3), Livingston Co., from Atkinson Windle Co., 10 Hickory St., Chillicothe, $164,858 and $138,218 resectively; conc. 1.195 mi., Rte SH, road from Delmar Blvd. and exten. in University City, Proj. F 428 (11), from Fred Weber Contg., Inc., 7929 Alabama Ave., St Louis, $259,744. CD 9/25.

New Jersey—State Hy Dpt., Trenton, Oct. 10, constr. 1.183 mi. White Horse Ave. and S. Olden Ave. storm drain from S. Broad St. to Maple Shade School and from White Horse to Maddock Aves., in Hamilton twp., Fed. Aid Secondary Projs. S-17 (4) and S-130 (1), Mercer Co., from A. J. Cunningham & Sons, 370 Newkirk Ave., Trenton, $168,862. CD 9/19.

Texas—State Hy. Comn., Austin, cancelled bids to have been opened Oct. 17, fdn. course, one course surf. tr. 9.672 mi. Hy. F. M. 1231 and U. S. 84 Detour from U. S. Hy. 84 in Snyder to 8.9 mi. north, Control No. 1361-3-2 and C 53-8-15. FP No. S 884 (2), Scurry Co. CD 10/5.

Texas—State Hy. Comn., Austin, cancelled bids to have been opened Oct. 18, flexible base, one course surf. tr. and seal coat 6.236 mi. Hy. F. M. 1219, from S. H. 82 north of Wickett 6.2 mi. to Wickett, Control No. R 1370-101, Ward Co. CD 10/5.

▲ **Tex., Dallas**—Dallas Co., Court House, cancelled bids to have been opened Nov. 4, Inwood-Hampton Rds. connection through West Dallas, exten., wid'n., paving and bridges. $4,750,000. Will re-advertise. CD 10/3.

Tex., Houston—Houston Realty Co., 8702 Humble Rd., Sept. 11, 5 in. c. conc. paving 27 ft. wide, street paving in sub-division, from L. V. Givens & Son, Pasadena, $56,516. Est. $50,000. CD 9/5.

Wisconsin—State Hy. Comn., Madison, Oct. 3, grading, draining 1.247 mi. C.T.H. D—Monona Sect. U. S. Hys. 12 and 18, the South Madison Belt Line Rd., Proj. F 104-2 (21), Dane Co., from Henry A. Rasmisch, Middleton, $109,719; sand-grav. fill 30,000 cu. yds. grav. or crushed stone surf. 60,000 cu. yds. AFE No. 37-015 the Mosinee-Elderon Rd., S. T. Hy. 153, Marathon Co., from H. T. Smith, Hixton, $72,000. CD 9/20.

CONTRACTS AWARDED

▲ **Ala., Mobile**—City, paving 73 streets in western section city residential area, Contr. 1, to Harbert & Cargile, Monroe Park, $632,836***Contr. 2, to Ladlaw Contg. Co., 300 Woodland Ave., $554,733***Contr. 3, to Foster & Creighton Co., American National Bank Bldg., Nashville, Tenn., $441,220***Contr. 4, to Hancock Constr. Co., Tacon St., $431,604. Grand total $2,060,393. CD 12/20.

Arizona—State Hy. Dpt., 17 Ave. and Jackson St., Phoenix, constr. bit. 1¼ mi. approach road to Davis Dam, Mohave Co., to Kolob Constr. Co., 610 N. Central Ave., Phoenix, $68,668; bit. 4 mi. West Chanler -Higley Hy., Maricopa Co., to Wallace & Wallace, S. 19 Ave., Phoenix, $86,644. Awarded 10/46.

La., Lake Charles—City paving streets and sidewalks, Proj. 1, to Flenniken Constr. Co., P. O. Box 634, Shreveport, $163,056***Proj. 2, to W. R. Aldrich & Co., P. O. Box 147, Alexandria, $207,934***Proj. 3, to T. L. James & Co., Kenner, $102,171. Grand total $473,161 Bids 10/4. CD 9/26.

Miss., Jackson—City, paving Terrace Ave., Glenwood, Duane and Long Sts., Wynwood Drive, and Whitfield Mills Rd., to R. B. Tyler Co., 1316 High St., $50,618. CD 9/25.

Okla., Tulsa—City, City Hall, grading, paving portions 17, 18, 19 and 20 Sts. from Lewis to Columbia Sts., to Standard Paving Co., 2119 E. 11 St., $154,906. Est. $156,000. CD 6/1.

Pa., Phila.—Dpt P. Wks., City Hall Annex, resurf. Oxford and Castor Aves., to Eastern Asphalt Co., Packard Bldg., Phila., $109,594. Bids 9/29. CD 9/26.

Tex., Altair—Superior Oil Co., Oil & Gas Bldg., Houston, roads, street grading, drainage, paving, Owner builds, $65,000. B. H. Toliver, Jr., Eagle Lake, engr. CD 8/4.

Tex., Houston—W. E. Robertson, trustee for Owner, 1537 Gardenia St., street constr. and asph. and sheil paving, 80 acre tract between Chocolate Bayou and Mykawa Rd., own forces. $62,600. CD 7/14.

Tex., Houston—Bennie Strickland, 3402 Sunset Blvd., street construction and asph. paving, location north of Clinton Dr. between McCarthy Dr. and Switser St. Owner builds, $61,000. Frank J. Metyko, Scanlan Bldg., engr. CD 9/29.

Wash., Seattle—City, County-City Bldg., paving Prosch Ave. W., etc., to Northwest Constr. Co., 3950 6 Ave. N. W. $146,758. Est. $168,522. Bids 10/4. CD 9/28.

Wisconsin—State Hy. Comn., Madison, ballast and base course 11.371 mi. Stratford-Mosinee Road, S. T. Hy. 153, Proj. S 011 (1), Contr. 3, Marathon Co., to Carl & Joe Theiler, Inc., Tomahawk, $125,453***bit. Rock Springs-S.T.H. 33 Road, S.T. Hy. 136, Contr. 3, Proj. T 0217 (2), Sauk Co., to Alexander Constr. Co., 5641 Hiawatha Ave., Minneapolis, 6, Minn., $74,618***ballast and base course 7.917 mi. Pittsville-Wisconsin Rapids Rd. S. T. Hys. 13 and 73, Proj. F04-4 (18), Contr. 3, Wood Co., to Lampert & Lampert, Inc., 1055 Bowen St., Oshkosh, $148,835*** grav. or crushed stone surf. 4 mi. West County Line-U.S.Hy. 45 Road, S. T. Hy. 43, Contr. 2, Proj. T 0469 (2), Kenosha Co., to The White Constr. Co., 2543 W. Greves St., Milwaukee, 3, $92,995***grav. or crushed stone surf. 30,000 cu. yd. Hixton-Osseo Rd., S. T. Hy. 27, A.F.E.'s Nos. 27-013 and 61-014, Jackson and Trempealeau Counties, to A. T. Riese, Wisconsin Dells, $68,400. Grand total $510,291. Bids 10/3. CD 9/20.

EARTHWORK, WATERWAYS

BIDS ASKED

† **Louisiana**—B.A. 10/31—U. S. Eng., foot of Prytania St., New Orleans, Zone 9, constr. 16,500 lin. ft. brush dikes, Item M 42.8 R, Hayes Canal Levee Brush Dike; 3,100 lin. ft. Item M 18.0 R, Boothville Levee Brush Dike; 3,500 lin. ft. Item M 14.0 R, Upper Venice Levee Brush Dike, on west bank of Mississippi River in Plaquemines Parish, Mississippi River Levees and Barataria Levee Dist., CIVENG 16-047-51-58.

† **Mississippi**—B.A. On or About 10/31—U. S. Eng., 2301 Grant St., Mobile 7, Ala., clearing, snagging on Oldtown Creek of West Fork of Tombigbee River, in Lee Co., CIVENG 01-076-51-27.

LOW BIDDERS

Illinois—State Capitol, Springfield, Sept. 26, Hofmann Dam in Des Plaines River, Riverside, from Superior Concrete Constr. Co., 5113 S. Woodlawn St., Chicago, $65,240.

N. J., Atlantic City—City Comn., City Hall, constr. 2,193 lin. ft. timber bulkhead along inside thoroughfare, from Atlantic County Constr. Co., Virginia Ave. and Mediterranean Ave. $157,859.

† **New Mexico**—Bureau Reclamation, Dpt. Interior, Fort Sumner, Oct. 3, earthwork, pneumatically applied mortar lining and structures for Main Canal Station 137 plus 65 to end; and earthwork, structures for main canal laterals and wasteways, Spec. 5174, Fort Sumner Proj., from Macco Corp., 14409 Paramount Bldg., Paramount, Calif., $336,264. Est. $311,926. CD 9/11.

CONTRACTS AWARDED

New Jersey—State Dpt. Conservation & Economic Development, Trenton, dredging Ottens Harbor, waterway to be dredged west of Wildwood from Richardson's Channel on the south thru Grassy Sound Channel and into Ottens Harbor, Wildwood, Cape May Co., to Hill Dredging Co., 560 Atlantic Ave., Atlantic City, $70,340.

† **Oregon**—U. S. Eng., Pittock Block, Portland, clearing areas "F" and "G" in reservoir area 4½ mi. above Detroit Damsite, CIVENG 35-026-51-49, to Schutt Constr. Co., Genoa, Wis., $362,999. Est. $475,200. Bids 9/28, awarded 10/3. CD 8/24.

Tex., Altair—Superior Oil Co., Oil & Gas Bldg., Houston, earthwork, grading, site development. Owner builds, $55,000. B. H. Toliver, Eagle Lake, engr. CD 8/4.

Tex., Houston—Bennie Strickland, 3402 Sunset Blvd., open and closed drainage. Owner builds, $55,000. Frank M. Metyko, Scanlan Bldg., engr. CD 9/29.

AIRPORTS

BIDS ASKED

Mo., Kansas City—RUNWAY—B.A. 10/24—City c/o John E. Maring, city engr., City Hall, Zone 6, paving 150x7,000 ft. runway and 75 ft. taxiways, CD 11/10/47.

† **Mass., Squantum**—FIRE ALARM SYSTEM—B.A. 10/25—First Naval Dist. Headquarters, 495 Summer St., Boston, Zone 10, automatic fire alarm sys., incl. altering heating, plumbing, electrical facilities, Bldg. 52, at U. S. Naval Air Station, Spec. 25245.

LOW BIDDERS

† **Tex., Randolph Field**—CONTROL TOWER—U. S. Eng., 606 Santa Fe Bldg., Galveston, Air Base Control Tower, Inv. No. Eng 41-243-51-2, from Forgy Constr. Co., Box 6521, San Antonio, $134,669. CD 10/20/48.

CONTRACTS AWARDED

N. Y., Idlewild—TERMINAL BLDG.—Port of New York Auth., 111 8th Ave., New York, Zone 11. Phase 2, expansion of Temporary Terminal Bldg., at New York International Airport, Contr. NYA 113, to Amdor Structures, Inc., 147 E. 86 St., New York, $73,214; rehabilitation ladder track, to Thomas Marino Co., Inc., 31 Grove St., East Paterson, N. J. $59,093. Bids 8/31. CD 8/18.

PUBLIC BUILDINGS

BIDS ASKED

Conn., Deep River—SCHOOL—B.A. 10/24—Bd. Educ., Town Hall, regional high school, Kelsey Hill, $800,000 Plans deposit $50. Extended date. Ernest Sibley, 7 S. Main St., West Hartford, archt. CD 10/4.

Va., Spotsylvania—B.A. 10/24—At office C. Melvin Snow, School Supt., Court House, Robert E. Lee School $375,000. Dixon & Norman, 1103 E. Main St., Richmond, archts.

La., Bogalusa—EDUCATIONAL—B.A. 10/25—Superior Avenue Baptist Church, Bogalusa, 3 story, 97x98 ft., steel brick over hollow tile, L-shaped educational bldg. Spain & Biggers, Guaranty Bank Bldg., Jackson, archts.

O., Barberton—HIGH SCHOOL—B.A. 10/28—Bd. Educ., Norton-Local School ist., Route 1, Barberton, Senior High School. W. B. Huff, 1050 N. Main St., Akron, 10, archt. Plans deposit $20. CD 1/29/47.

▲ **Conn., Norwich**—POWER PLANT—B.A. 10/31—Controllers Office, Hartford, power plant for Norwich State Hospital, $1,500,000. Plans deposit $25. CD 12/1/49.

▲ **Del., Newark**—AGRICULTURAL SCHOOL—B. A. 10/31 University of Delaware, Newark, agricultural school, $1,250,000. Extended date. Trautwein & Howard, 1411 Walnut St., Phila., Pa., archts. CD 7/6.

Ga., Monticello—HOSPITAL—B.A. 10/31—Jasper Co., hospital. Plans deposit $25. Albany Architects & Engineers, Albany, archts.

New Jersey—SHOP, etc.—B.A. 10/31—New Jersey Turnpike Auth., 65 Prospect St., Trenton, Contr. 67, furnishing, fabrication, shop painting, delivery to site of work and erecting structural steel work to complete the administration bldg. approx. 2 mi. east of New Brunswick, north of intersection existing Rte. S-28 and N. J. Turnpike now under construction and south of School House Lane. Alfred Fellehimer & Steward Wagner, 155 E. 42 St., New York, 17, N. Y., archts. and engrs.

▲ **Ont., Toronto**—SCHOOL—B.A. 10/31—North York Twp. Collegiate Bd., 5145 Yonge St., Willowdale 2 story, structural steel, rein.-con. high school on Lawrence Ave. W. and Bathurst St., $1,000,000. Plans deposit $50. Allward & Gouinlock, 57 Bloor St. W., archts. CD 4/7.

Fla., Miami—SCHOOLS—B.A. 11/1—Dade Co. Bd. P. Instruction 275 N. W. 2 St., Kensington Park School, $270,000. Steward & Skinner, 223 S. E. First St., archts. CD 10/9.

Ky., Lexington—HOSPITAL—B.A. 11/2—B. H. Lowny, dir. Div. Purchases, Commonwealth of Ky., Div. Purchases, State Office Bldg., Frankfort, Negro Ward Bldg. at Eastern State Hospital, Plans deposit $25. Frankel & Curtis, Central Bank Bldg. archts. & engrs., consultants J. B. Rieman 110 State Office Bldg., Frankfort, ch. engr. CD 3/9.

O., Toledo—SCHOOL—B.A. 11/3—Wm. E. Hallauer, asst. supt. Bd. Educ., Southard Ave. De Veaux School addn., Sylvania Ave. and Maxwell Rd. Plans deposit $15. Britsch & Munger, Nicholas Bldg., archts. CD 1/20.

O., Ironton—GARAGE—B.A. 11/3—S. O. Linzell, dir., Dpt. P. Wks., 705 Ohio Depts. Bldg., Columbus, Lawrence county highway garage. H. G. Allen, c/o owner, cons. archt.

Conn., Storrs—PHARMACY—B.A. 11/6—Controllers Office, State Capitol, Hartford, pharmacy bldg., University of Connecticut, $634,000 Plans deposit $25. CD 8/23, under LB.

LOW BIDDERS

Del., Harrington — SCHOOL, etc. — Harrington Del. School Dist. and Delaware State Bd. Educ., Dover, Oct. 4, school and gymnasium addn., from Carley F. Rohlede, 770 S. Schuylkill Ave., Phila., Pa., $362,863. CD 9/19.

Del., Newark—DORMITORY—University of Delaware, Newark, Sept. 29, girls dormitory, from Sheppeard & Co., Inc., 213 Greenhill St., Wilmington, $429,753. CD 9/19.

Ky., Danville—FACTORY—City, Oct. 6, 1 story, 150x300 ft., brick factory, from Harrison Wood Co., Danville, $356,600. Est. $250,000. CD 9/20.

La., Lafayette—LAUNDRY—State Division of Admin., Baton Rouge, Oct. 4, laundry at Lafayette Charity Hospital, from Kaplan Constr. Co., P. O. Box 1, S. L. I. Station, $103,500. CD 9/22.

Minn., Marshall—SCHOOL—Bd. Educ., Dr. M. J. Carrow, clk., rejected bids Aug. 25, school, L. B. $425,500. Will re-advertise. CD 9/8, under LB.

Mont., Anaconda—HOUSING—Anaconda Housing Auth., Oct. 5, 50 family Cedar Park Housing, from Sletten Constr. Co., 1301 Tenth Ave. N., Great Falls, $682,639. Est. $495,000.

▲ **N. Y., Mineola**—ADMINISTRATION—Bd. Supervs. Nassau Co., Old Court House, Oct. 10, administration bldg. at fairgrounds, from Psaty & Fuhrman, 369 Lexington Ave., New York, Zone 17, $1,870,000. CD 9/8.

N. C., Chapel Hill—HIGH SCHOOL—Chapel Hill School Admin. Unit, C. W. Davis, secy. Bd. Trustees, Chapel Hill, Oct. 4, general contract high school, from J. A. Jones Constr. Co., 209 W. 4 St., Charlotte, $392,000. CD 9/15.

Pa., Willow Grove—SCHOOL—Upper Moreland School Bd., Willow Grove, Sept. 27, school from Roth Constr. Co., 2004 N. Broad St., Phila., $252,000. CD 9/1.

▲ **S. C., Spartanburg**—HOUSING—Spartanburg Housing Auth., c/o Harold Woodward, archt., 247½ E. Main St., Oct. 6, Proj. SC 3-3; 100 housing units, from McKoy-Helgerson Constr. Co., 320 S. Hudson St., Greenville, $1,036,000.

Tex., Albany—SCHOOL, etc.—Albany Independent School Dist., Albany, Oct. 3, elementary or grade school and high school gymnasium, from Templeton & Cannon, 208 Central Natl. Bank Bldg., San Angelo, $430,206. Caudill, Rowlett & Scott, Box 1351, College Station, archts.

Va., Pulaski—SCHOOL—Pulaski Co., Pulaski, Sept. 28, Claremont School, from Trinkle & Dobyns, Dublin, $384,500. CD 9/11.

Wis., Watertown—SCHOOL—Bd. Educ., Watertown, Sept. 28, general contract 1 story L-shaped 240x184 ft. Webster School, from Maas Bros. Constr. Co., 712 W. Main St., $416,352. CD 9/20.

CONTRACTS AWARDED

Calif., South San Francisco—SCHOOL—South San Francisco School Dist., South San Francisco, wood, steel Brentwood-Southwood School, to Harris & Fieldheim, 1008 Alama Ave., Menlo Park, $272,928. Bids 10/4. CD 9/19.

▲ **Fla., Tampa**—HOUSING—Tampa Housing Auth., 608 Tampa St., College Hill Homes Housing, to Settecasi & Chillura, 2101 5 Ave., $809,900, Bids 8/30. CD 9/12, under LB; Riverview Terrace Housing, to Ellis-Thompson Constr. Co., 3603 Morrison Ave., $683,368, Bids 8/23, CD 8/29, under LB.

Ind., Hammond—SCHOOL—School City of Hammond, 5935 Hohman St., school, Black Oak and 173 Sts., to Leo Reuth & Son, inc., 1050 Cherry St., $322,900. Bids 8/22, awarded 10/2. CD 8/15.

† **N. M., Los Alamos**—COMMERCIAL FACILITIES—U. S. Atomic Energy Comn., Los Alamos, commercial facilities, viz, community center, etc., to Haddock Engineers, Ltd. & Assoc., Box 1691, Santa Fe, $345,421. Bids 9/26. CD 8/10.

Mich., Grosse Pointe—SCHOOL—Grosse Pointe Twp., Bd. Educ., J. R. Barnes, supt. Schools, 389 St. Clair Ave., 2 story, bsmnt., brick Kerby School addn., Beaupre Ave. and Kerby Rd., to Joseph A. Krausman Co., 4612 Woodward, Detroit, $250,000. Bids 9/13. CD 9/6.

Mont., Wolf Point—SCHOOL—School Dist. 45, general contract high school, to Hitz Constr. Co., Billings, $349,868. Bids 9/16. Fred Brinkman, Kalispell, archt.

Okla., Langston—PHYSICAL EDUCATION—Bd. of Regents, Capitol, Oklahoma City, Zone 5, physical educ. bldg. at Colored A & M College, to The Dewitt Co., Tuloma Bldg., Tulsa, Zone 4, $357,333. Est. $350,000. Awarded 10/5. Nolen & Moure, Okla. Natural Bldg., Oklahoma City, archts.

S. C., Charleston—ORPHANAGE HOME—City, orphanage home, to Charleston Constructors, Inc., Adgers Wharf, $270,142. CD 9/7/48.

Va., Lynchburg—SCHOOL—State of Virginia, Richmond, school and auditorium at Lynchburg State Colony to C. L. Lewis, Lynchburg, $646,592. Bids 9/11. CD 9/18, under LB.

Que., Ste. Foy—HOSPITAL—Dpt. P. Wks., Hunter Bldg., Ottawa, Ont., constr. Third Phase of Veterans Hospital Bldg. for Dpt. Veterans Affairs, to Eastern Canada Steel & Iron Works Ltd., 57 Lesage St., Quebec City, $478,817. CD 1/21/48.

COMMERCIAL BUILDINGS

BIDS ASKED

▲ **Pa., Phila**—SCHOOL—B.A. 11/1—University of Pennsylvania, 209 S. 36 St., Wharton School. $2,000,000. Extended date. McKim Mead & White, 101 Park Ave., New York, N. Y., archts. CD 10/4.

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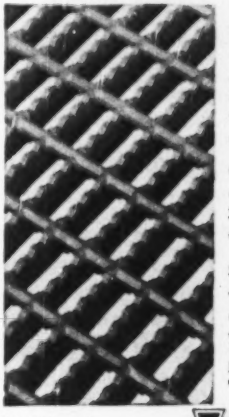

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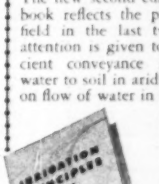

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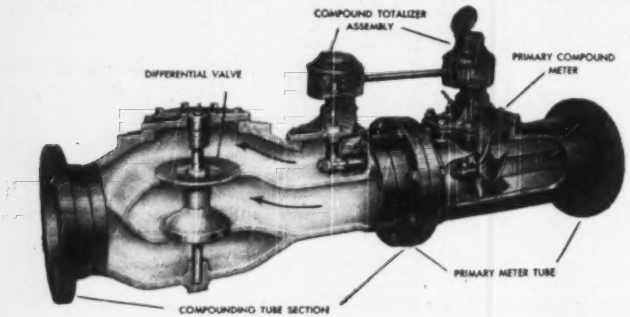

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SOON LETS CONTRACT

Nev., Reno—OFFICE—Owner, c/o Paul C. Overmire, archt., 79 Post St., San Francisco, Calif., soon lets contract 4 story bsmnt., rein.-con., steel commercial office bldg., 2 elevators, air-conditioning, sidewalks, $500,000. Hyman Rosenthal, 617 Montgomery St., San Francisco, Calif., engr. CD 9/27.

LOW BIDDERS

R. I., Woonsocket—HOSPITAL—Woonsocket Hospital, C. U. Christiansen, clm. Bldg. Comn., 1210 Union Trust Bldg., Providence, Oct. 3, 4 story, bsmnt., 50x170 ft. brick hospital addn., alterations, Cass Ave., from Volpe Constr. Co., 54 Eastern Ave., Malden, Mass., $937,341. CD 9/19.

CONTRACTS AWARDED

▲ D. C., Wash.—OFFICE—Capitol Court Corp., Alexander B. Hagner, pres., Washington Bldg., Zone 5, 8 story, bsmnt., 160x120x68 ft., limestone face and steel frame office 3 St., C. St. and Indiana Ave. N.W., to John McShain, Inc., 1501 N. Arlington Ridge Rd., Arlington, Va. Approx. $2,000,000. Awarded 10/5. Leon Chatelain, Jr., 1727 K St. N. W., archt.

Ga., Atlanta—APARTMENT UNITS—Argonne Village, c/o S. Walton Peabody, archt., 530 N. McDonough St., Decatur, 54 apartment units, Owner builds, $400,000.

O., Cleveland—SCHOOL—Park Synagogue, 3325 Euclid Heights, school bldgs. to Leonard H. Krill Co., 2169 E. 33 St. Approx. $500,000. Eric Mendelsohn, Michael A. Gillis, Assoc., 627 Commercial St., San Francisco, Calif., archts.

Pa., Phila.—RESIDENTIAL DEVELOPMENT—Boardman-Smith Corp., 1322 W. Airdrie St., residential development, Fairhill St., separate contracts, $336,000. S. Sherwin Richlis, 721 Walnut St., archt.

Pa., Phila.—RESIDENCES—Broad Constr. Co., Inc., 6333 Broad St., residential development, Kerper St., separate contracts. Approx. $400,000. J. Ethan Fieldstein, 1325 Walnut St., archts.

Tex., Bellaire — DWELLINGS — Townsend Constr. Co., 3525 Westheimer St., Houston, 40 dwellings. Owner builds. Approx. $475,000. CD 9/26.

Tex., Fort Worth—DWELLINGS—Shelby Owens & Assoc., 2201 8 Ave., 50 dwelling units, own forces. Approx. $490,000. CD 8/22.

Tex., Houston—DWELLINGS—S. N. Adams & Co., 4001 Westheimer Rd., 40 dwellings, former Gun Club site. Owner builds. Approx. $345,000. CD 10/2.

Tex., Houston—DWELLINGS—Brace & Carruth, 706 Garden Oaks St., 100 frame dwellings, concrete slab fdn., 175 acre tract Memorial Dr. area. Owner builds. $685,000. CD 4/13.

Tex., Houston—SHOPPING CENTER—W. E. Robertson, Sr., 1537 Gardenia St., Unit 1, addnl. shopping center, own forces. $325,000. CD 10/2.

Tex., Mesquite—HOMES—Centex Constr. Co., 3607-A Greenville St., Dallas, 50 addnl. frame homes, concrete slab fdn., Purchase and Hire. Approx. $360,000. CD 10/5.

Wash., Seattle—HOUSES—Cooperative Builders, Inc., 311 Central Bldg., Zone 4, 31 houses, 108 and 109 Aves. S. E. in 2800 and 3000 block and S. E. 30 in 1100 block, day labor. $441,000. CD 10/4.

INDUSTRIAL BUILDINGS

BIDS ASKED

Pa., Phila.—PACKING PLANT—Bids Asked—Morris Fruchtbaum, engr., 328 Chestnut St., packing plant alterations, for Quaker City Meat Co., 40 N. Delaware Ave. Approx. $100,000.

LOW BIDDERS

Ky., Lexington—FACTORY—Kentucky Glass Works of General Electric Co., Russell Cave Pike, factory addn., from Hargett Constr. Co., 113 Walton Ave., $250,000. CD 10/9.

Ala., Sylacauga—WAREHOUSE—Avondale Mills, Inc., c/o Lockwood Greene Engineers, 920 Montgomery St., Spartanburg, S. C., warehouse, to General Constr. Co., 1815 Blanding St., Columbia, S. C., approx. $500,000.

Ark., Little Rock—PLANT—Westinghouse Electric Corp., Service Boyle Bldg., light bulb plant expansion, to Dilmars, Dickman & Pickens, Gazette Bldg. $500,000. Bruggeman, Swaim & Allen, Gazette Bldg., archts. CD 12/19/46.

Calif., Bakersfield—MARKET, etc.—C. E. Houchin Development Co., 2526 F St., masonry market and store, to Guy E. Hall, 310 30 St., Bakersfield, $380,270. Stiles Clements, Van Nuys Bldg., Los Angeles, archts. CD 6/22.

Ill., Chicago—LOFT—Formfit Co., 4000 S. Peoria St., Zone 7, loft expansion, alterations, to Gerhardt F. Meyne Co., 7 S. Dearborn St., Zone 3, $250,000. Bids 6/26, awarded 9/29. CD 6/20.

Ill., Chicago—WAREHOUSE—Philco Distributors, Inc., 548 N. Lakeshore Dr., 1 and 2 story, 90,000 sq. ft. warehouse, Stickney Twp., near here, to Clearing Industrial Dist., 6455 S. Central St., Zone 32, $700,000. John S. Cromelin, 6455 S. Central St., Zone 32, archts. Awarded 9/25.

Ill., Evanston—MILL—Clayton Mark Co., 1900 Dempster Ave., 2 story, 60x200 ft., tube mill addn., to Carlson Constr. Co., 1916 Lee St., $250,000. Awarded 10/2.

Ind., East Chicago—PLANT—Harbison Walker Refractories Co., Kennedy Ave. at Chicago St., 40,000 sq. ft., refractory brick plant addn. to Geo. Solfitt Constr. Co., 109 N. Dearborn St., Chicago, 2, Ill., $275,000. Awarded 9/27.

Minn., Minneapolis—GARAGE, etc.—Western Electric Co., 3120 E. 28 St., general contract 1 story, 151x225 ft., steel, masonry garage and warehouse addn. at site, to C. F. Haglin & Sons, 123 Bryant St. N., $254,500. J. F. Puth, c/o owner, archt.

Tex., San Angelo—BOOSTER STATION—Pan American Pipe Line Co., M. Esperson Bldg., Houston, auxiliary crude oil booster station and auxiliary facilities, allied, own forces. Approx. $200,000. CD 9/25.

▲ **Tex., Sweetwater**—CEMENT MILL—Lone Star Cement Corp., 1st. Natl. Bank Bldg., Dallas, main cement mill and 2 kilns, 10 ft. diam., 343 ft. long at Maryneal, south of here, to Walsh Constr. Co. and Gifford-Hill & Co., Inc., Texas Bank Bldg., Dalls, $1,725,000. CD 7/14/49.

UNCLASSIFIED

BIDS ASKED

North Carolina—HEADQUARTERS BLDG.—B.A. 10/26—Brunswick Electric Membership Corp., Shallotte, headquarters bldg., at Shallotte, Brunswick Co. Plans deposit $25. Southern Eng. Co., 1000 Crescent Ave. N. E., Atlanta, Ga., engr. CD 4/28.

† **Arkansas**—OIL CIRCUIT BREAKERS—B.A. 10/27—U. S. Eng., 300 Broadway, Little Rock furnishing oil circuit breakers, disconnect switches spare parts for Norfolk Dam, Cotter, CIVENG 03-050-51-18.

Pennsylvania—VENTILATING SYS. FANS, etc.—B.A. 10/27—State Hy. Dpt., 506 N. Office Bldg., Harrisburg, furnishing, installing fans, motors and transmissions for the ventilation sys. in ventilation bldg., of Squirrel Hill Tunnel on Penn-Lincoln Parkway, L. R. 763, Sect. 4-5, T.R.U. S. 22 and 30 Allegheny Co. Plans deposit $2.50. E. L. Schmidt, c/o owner, ch. engr.

† **N. M. Las Cruces**—FACILITIES—B.A. 11/2—U. S. Eng., 2132 E. Central Ave., Albuquerque, White Sands Proving Ground, facilities for U. S. Naval Unit, Transfer Facilities for Production Well P-1 (NAV-93), Serial No. Eng 29-005-51-9. CD 9/29.

LOW BIDDERS

La., Baton Rouge—SWIMMING POOL—Recreation & Park Comn. of East Baton Rouge Parish, Oct. 4, swimming and wading pool at Howell Park, from Buquet & LeBlanc, P.O. Box 480, $148,883. CD 9/22.

N. C., Concord—RECREATION CENTER—Concord Recreation Comn., City Hall, Sept. 28, general contract recreation center, from Laxton Constr. Co., Inc., 127 Brevard St., Charlotte, $181,818. Est. $200,000. CD 9/21.

† **North Dakota**—SUB-STATION'S—Bureau Reclamation, Dpt. Interior, Bismarck, Oct. 3, 32,000 kva Bismarck and 7,500 kva Washburn sub-stations, Missouri River Basin Proj. Transmission Div. Spec. 3163, from Valley Eng. & Constr. Co., 1121 S. Washington St., Grand Island, $253,540. Est. $249,087. CD 9/5.

North Dakota—RURAL DISTRIBUTION LINES—Slope Electric Co-operative, New England, rejected bids Sept. 28, 194 mi. rural distr. lines, Bowman and Slope Counties, L. B. $214,068. CD 9/12.

† **South Dakota**—RAILROAD RELOCATION—U. S. Eng., 1709 Jackson St., Omaha, Neb., Oct. 3, relocation Chicago, Milwaukee, St. Paul & Pacific R.R. Co., Stage I, Fort Randall Reservoir Proj. near Chamberlain, Serial No. CIVENG 25-066-51-25, from Charles Hulme, Great Bend, Kan. $286,310. Est. $349,571. CD 9/13.

CONTRACTS AWARDED

Ga., Columbus—BASEBALL STADIUM—City, baseball stadium, to T. H. Pearce & Co., Edgewood Circle, $194,338. Bids 9/29. CD 9/22.

Iowa—RURAL DISTRIBUTION LINES—Osceola Electric Co-operative, Sibley, rural distr. lines, to Stewart, Inc., Anamosa, $101,871. Bids 9/26. Scott Eng. Co., Watertown, S. C., engr. CD 4/6/49.

New Mexico—RURAL DISTRIBUTION LINES—Lea County Electric Co-operative, Inc., Lovington, 221.79 mi. rural distr. lines, Lea Co., to Yeargout Pole Line Constr. Co., 218 W. Marquette St., Albuquerque, $254,657. Price & Hawk, 1641 Broadway, Lubbock, Tex., engrs. CD 3/4/49.

New Mexico—RURAL DISTRIBUTION LINES—Jemez Mountains Electric Co-operative, Inc., Espalande, 259.1 mi. rural distr. lines, Sandoval Co., to Nelley Bros. Constr. Co., Clovis, $394,232. Price & Hawk, 1641 Broadway, Lubbock, Tex., engrs.

Oregon—RURAL DISTRIBUTION LINES—Coos-Curry Electric Co-operative, Inc., Coquille, 52.09 mi. rural distr. lines, Coos Co., to S. E. Lawrence, 6 Ahuthy Rd., Oregon City, $157,403. CD 3/29/49.

South Dakota—RURAL DISTRIBUTION LINES—Central Electric Assn., Blunt, 281 mi. rural distr. lines, 5 mi. conversion Hughes Co., to Line Constructors, Sioux City, Ia., $299,250. Bids 9/27. CD 9/22.

South Dakota—RURAL DISTRIBUTION LINES—Grand Electric Co-operative, Bison, 34 mi. rural distr. lines, Adams Co., t. Sorkness Constr. Co., N. 23 and 7 Ave., Fargo, N. D. $110,209. CD 9/21.

Alberta—NATURAL GAS PIPE LINE—Western Natural Gas Co. Ltd., Banff, natural gas pipe line, jumping Pound to Exshaw and then along Spray River to Banff, Owner builds. $100,000.

Proposal Advertisements see pp. 101 to 105

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Bids: November 16, 1950 (136)

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NOTICE TO CONTRACTORS

Sealed proposals for the construction of the Administration Building and Toll Collection Facilities for the Delaware River Joint Toll Bridge Commission in Morrisville, Pennsylvania will be received by the Delaware River Joint Toll Bridge Commission at its office, 526 Broad Street Bank Building, Trenton 8, New Jersey, until eleven o'clock (11:00) A.M., Eastern Standard Time, on November 16, 1950 at which time and place all bids will be publicly opened and read aloud.

After October 19, 1950 Instructions to Bidders, form of Proposal, form of Contract, form of Performance Bond, Plans and Specifications may be examined at the office of the Commission, above address, or at the office of the J. E. Greiner Company, 1201 St. Paul Street Baltimore 2, Maryland, and copies thereof obtained upon payment of $15.00 for each set, which amount is not returnable.

Each bid must be accompanied by a certified check in the amount of $30,000.00.

All checks shall be made payable to the Delaware River Joint Toll Bridge Commission, which amounts shall be forfeited as liquidated damages if the bidder or bidders fail, within ten (10) consecutive calendar days after written notice that the bidder or bidders have been awarded the contract, to enter into a written contract with the Commission in accordance with the accepted bid, and to give a Performance Bond satisfactory to the Commission, equal to one hundred percent (100%) of the total amount of the Contract.

The Commission reserves the right to waive any informalities in the bids received; to reject any or all bids; and to award the contract only to those experienced in this class of work, and to the bidder whose proposal is deemed by the Commission to be most advantageous to the public interest.

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by: Alexander R. Miller
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Bids: November 9, 1950 (135)

Construction of Bridge Approach

DELAWARE RIVER
JOINT TOLL BRIDGE COMMISSION
526 Broad Street Bank Building
Trenton 8, New Jersey

NOTICE TO CONTRACTORS

Sealed proposals for the construction of the Trenton Approach to the Delaware River Bridge from Morrisville, Pennsylvania to Trenton, New Jersey will be received by the Delaware River Joint Toll Bridge Commission at its office, 526 Broad Street Bank Building, Trenton 8, New Jersey until eleven o'clock (11:00) A.M., Eastern Standard Time, on November 9, 1950 at which time and place all bids will be publicly opened and read aloud.

After October 12, 1950 Instruction to Bidders, form of Proposal, form of Contract, form of Performance Bond, Plans and Specifications may be examined at the office of the Commission, above address, or at the office of the J. E. Greiner Company, 1201 St. Paul Street, Baltimore 2, Maryland, and copies thereof obtained upon payment of $15.00 for each set, which amount is not returnable.

The following are approximate quantities of major items:

Roadway Excavation	61,000 C. Y.
Borrow Excavation	41,000 C. Y.
Structure Excavation	13,000 C. Y.
Laying 36" Sewer	900 L. F.
Class A Concrete	7,000 C. Y.
Reinforcing Steel Bars	745,000 Lbs.
Structural Steel	1,111,000 Lbs.
Spiral Shear Connectors	11,000 Lbs.
Reinforced Concrete Pavement	17,000 S. Y.

Each bid must be accompanied by a certified check in the amount of $75,000.00.

All checks shall be made payable to the Delaware River Joint Toll Bridge Commission, which amounts shall be forfeited as liquidated damages if the bidder or bidders fail, within ten (10) consecutive calendar days after written notice that the bidder or bidders have been awarded the contract, to enter into a written contract with the Commission in accordance with the accepted bid, and to give a Performance Bond satisfactory to the Commission, equal to one hundred percent (100%) of total amount of the Contract.

The Commission reserves the right to waive any informalities in the bids received; to reject any or all bids; and to award the contract only to those experienced in this class of work, and to the bidder whose proposal is deemed by the Commission to be most advantageous to the public interest.

DELAWARE RIVER JOINT
TOLL BRIDGE COMMISSION
by: Alexander R. Miller
Chairman of Commission

Date October 12, 1950

CONTRACTORS

Watch this Section for New Projects

Publish your announcement thru the "Proposals Section" of Engineering News-Record and get their bids.

OFFICIAL PROPOSALS
(Continued from page 101)

Bids: November 8, 1951 (133)

Sanitary Sewer System

Sealed proposals for the construction of the sanitary sewer system for the Endwell Sewer District will be received by the Town Board of the Town of Union at the Town Office Building, 3111 Main Street, Endwell, New York, until 2 o'clock P.M., E.S.T., on the 8th day of November, 1950.

Information for bidders can be obtained at the office of the Town Clerk at 3111 Main Street, Endwell, New York or at the office of William S. Lozier Company, Engineers, 10 Gibbs Street, Rochester, New York. Copies of plans may be obtained upon the payment of twenty-five dollars ($25.00) for each set, which will not be refunded.

The work consists of the construction of:

Section I Approximately 4. 3 miles of sanitary sewer 8" to 24" in diameter with appurtenances;

Section II Approximately 5.7 miles of sanitary sewer 8" and 10" in diameter with appurtenances;

Section III Approximately 4.4 miles of sanitary sewer 8" in diameter with appurtenances;

Section IV Approximately 5.4 miles of sanitary sewer, 8", 10" and 16" in diameter with appurtenances;

Section V Approximately 3.4 miles of sanitary sewer 8" in diameter with appurtenances.

WARREN E. YOUNG
Town Clerk

October 11, 1950.

(134)

New Jersey Turnpike Authority

TRENTON, N. J.

Sealed proposals will be received by the New Jersey Turnpike Authority for the following contracts.

* * *

CONTRACT NOS. 45, 45A and 45B

The work to be performed under these Contracts involves the construction of Substructures and Superstructures of the Oak Island Viaduct, and a Turnpike bridge over Delancy Street and other incidental work which will form a part of the New Jersey Turnpike in the City of Newark, Essex County.

Principal Items of work include:

Contract 45A—Substructures

Embankment for Relocated Interchange Tracks	7,000 Cu. Yds.
Open Foundation Excavation	14,000 Cu. Yds.
Furnishing Steel Bearing Piles	8,100,000 Lbs.
Driving Steel Bearing Piles	104,000 Lin. Ft.
Untreated Timber Piles	6,500 Lin. Ft.
Pile Coating	12,000 Lin. Ft.
Concrete in Abutments, Wing Walls and Bents	22,000 Cu. Yds.
Reinforcement Steel	2,600,000 Lbs.
Protection of Railroad Traffic	Lump Sum

Contract 45B—Superstructures

Structural Carbon Steel	15,000,000 Lbs.
Castings	55,000 Lbs.
Reinforcement Steel	1,800,000 Lbs.
Concrete in Deck Slabs, Walls, Safety Walks, Backwalls of Abutments and Parapets	7,000 Cu. Yds.
Metal Railings	4,300 Lin. Ft.
Protection of Railroad Traffic	Lump Sum

Principal items of work for Contract No. 45 equals the sum of the quantities listed for Contracts 45A and 45B.

Proposals will be received at the office of the New Jersey Turnpike Authority, 65 Prospect Street, Trenton 8, New Jersey, until 10:30 o'clock on the morning of October 31, 1950 and thereafter in the Veterans Room of the War Memorial Building, Memorial Drive at Willow Street, Trenton, New Jersey until 11:00 A.M. on the same date, at which latter time and place said proposals will be publicly opened and read.

Contract documents may be seen and may be inspected by prospective bidders during office hours after October 10, 1950 at the office of the New Jersey Turnpike Authority, 65 Prospect Street, Trenton, New Jersey, and at the office of the Engineers Ammann & Whitney, 185 Raymond Boulevard, Newark, New Jersey or 76 Ninth Avenue, New York 11, New York.

OFFICIAL PROPOSALS

The Contract will be awarded or proposals rejected within fifteen (15) days from the date of opening proposals. The right is reserved to reject any and all proposals.

* * *

CONTRACT NO. 60

The work to be performed under this Contract involves the construction of about eighteen (18) miles of four-lane asphaltic concrete or Portland cement concrete pavement, interchanges and incidental work in connection with the construction of the New Jersey Turnpike, Section 2, between Woodbury Heights and Hartford, in Gloucester, Camden and Burlington Counties, New Jersey.

The completion date is October 1, 1951.

Principal items of work include:

Excavation and Grading	80,000 Cu. Yds.
Pavement—Asphaltic Concrete or Portland Cement Concrete	603,000 Sq. Yds.
Shoulders—Types F, G and H	323,000 Sq. Yds.
Curbing	21,400 Lin. Ft.
Topsoiling	735,000 Sq. Yds.
Sod Curbing	201,000 Lin. Ft.
Drains	52,000 Lin. Ft.
Inlets and Manholes	825 Each

Proposals will be received at the office of the New Jersey Turnpike Authority, 65 Prospect Street, Trenton 8 New Jersey, until 1:30 o'clock on the afternoon of November 6, 1950 and thereafter in the Veterans Room of the War Memorial Building, Memorial Drive at Willow Street, Trenton, New Jersey until 2:00 P.M. on the same date, at which latter time and place said proposals will be publicly opened and read.

Contract Documents may be seen and may be inspected by prospective bidders during office hours on and after October 12, 1950 at the office of the New Jersey Turnpike Authority, 65 Prospect Street, Trenton 8, New Jersey and at the office of the Engineer, Gannett Fleming Corddry and Carpenter, Incorporated, 600 North Second Street, Harrisburg, Pennsylvania and Farrington Airport, Barrington, New Jersey.

The Contract will be awarded or proposals rejected on or before December 1, 1950. The right is reserved to reject any or all proposals.

* * *

CONTRACT NO. 67

The work to be performed under Contract involves the furnishing, fabrication, shop painting, delivery to the site of the work and erection of all the Structural Steel work required to complete the Administration Building to be built approximately two miles east of New Brunswick, New Jersey, north of the intersection of existing Route S-28 and the New Jersey Turnpike now under construction and south of School House Lane.

Proposals will be received for furnishing, fabricating, shop painting, delivery to the site and erection of all the Structural Steel required for the Administration Building.

Proposals will be received at the office of the New Jersey Turnpike Authority, 65 Prospect Street, Trenton 8, New Jersey, until 10:30 o'clock on the morning of October 31, 1950 and thereafter in the Veterans Room of the War Memorial Building, Memorial Drive at Willow Street, Trenton, New Jersey until 11:00 A.M. on the same date, at which latter time and place said proposals will be publicly opened and read.

Contract Documents may be seen and may be inspected by prospective bidders during office hours after October 13, 1950, at the office of the New Jersey Turnpike Authority, 65 Prospect Street, Trenton 8, New Jersey, and at the office of Alfred Fellheimer and Steward Wagner, Architects and Engineers, 155 East 42nd Street, New York 17, New York, General Architects for the Authority.

* * *

The receipt and opening of proposals is subject to proper prequalification of the bidder in accordance with the regulations adpoted by the New Jersey Turnpike Authority. Bidders must also submit with their proposal a revised financial statement and a statement of plant and equipment.

Contract Documents will be furnished for $5.00 for each set, upon application to the Authority. The payment will not be refunded and the Contract Documents are not required to be returned.

Proposals must be made upon the standard proposal forms in the manner designated in the Standard Specifications for Construction of the New Jersey Turnpike and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and the number of the contract on the outside, and must be accompanied by a certified check drawn to the order of the New Jersey Turnpike Authority and a proposal bond, each for not less than five (5) percent of the amount of the proposal, but not less than $500.00 nor more than $200,000.00 and must be delivered with proposal on or before the hour named. Where proposals are submitted for more than one contract, one check and one bond on the largest amount of work will be sufficient. Copies of the proposal form to be used for submitting proposals, of the form for proposal bond, of the form to be used for financial statement and plan and equipment statement to be submitted with proposal and special addressed envelope are furnished in detached form with the Contract Documents. Bidders submitting proposals on combination of Contracts Nos. 45A and 45B are required to submit only one statement of plan and equipment.

NEW JERSEY TURNPIKE AUTHORITY
Paul L. Troast
Chairman

Bids: November 16, 1950 (127)

Water Storage Reservoirs

Sealed proposals for furnishing all plant, labor, and materials for the construction of two (2) 119-foot inside diameter prestressed concrete water storage reservoirs, including miscellaneous piping, connections and appurtenances at Oxford Summit, Chester County, Pa., under Contract No. 20: Two (2) 205-foot inside diameter (Alternate 1) or three (3) 205-foot inside diameter (Alternate 2), or four (4) 205-foot inside diameter (Alternate 3), pre-stressed concrete water storage reservoirs, and a chlorination and meter building, including miscellaneous piping, connections and appurtenances at Village Green, Delaware County, Pa., under Contract No. 21; and new piping and alterations to existing piping, additions and alterations to existing Gate House and effluent flume, at the existing Harrison Hill Reservoir, Delaware County, Pa., under Contract No. 22; will be received by the Executive Manager of the Chester Municipal Authority at the Authority Office, 5th and Welsh Streets, Chester, Pennsylvania up to 2:00 o'clock P.M., Eastern Standard Time, on November 16, 1950, at which time the proposals will be publicly opened and read aloud.

The work will be awarded singly under each contract or under Contract No. 20 and 21 in combination, or under Contracts 20, 21 and 22 in combination, as deemed to be the best interests of the Owner. The work under Contract No. 21 will be awarded under either one of the three alternates.

Information for Bidders, Form of Bid, Specifications and Form of Contract may be examined at the Office of the Chester Municipal Authority or at the office of Albright & Friel Inc., Consulting Engineers, 121 South Broad Street, Philadelphia 7, Pennsylvania; and copies thereof may be obtained at either office on and after October 23, 1950 upon a deposit of $30.00 for each set of documents applying to all contracts. If the documents are returned in good condition within five days after opening of bids, the full amount of the deposit will be returned to each actual bidder for one set of plans and other deposits will be refunded with a deduction of $15.00 to defray the actual cost of reproduction. If the documents are not returned within the time stated, the entire amount of deposit will be forfeited.

A certified check or bid bond drawn to the order of the Chester Municipal Authority equal to five per cent (5%) of the amount of bid must be submitted with the proposal on each contract.

The proposal must be sealed and marked "Contract No. 20" or "Contract No. 21", or "Contract No. 22" or any combination as listed above, addressed to the Chester Municipal Authority, c/o Clarence L. Conner, Executive Manager.

The Board reserves the right to reject any and/or all bids.

CLARENCE L. CONNER
Executive Manager

October 9, 1950

(Continued on page 103)

OFFICIAL PROPOSAL

RATE: $1.00 per line (or fraction) per insertion.

CLOSING DATE: 12:00 p.m. Friday for issue out following Thursday.

SEND COPY: Official Proposal Division, Engineering News-Record, 330 W. 42nd St., New York 18, N. Y.

OFFICIAL PROPOSALS

(Continued from page 102)

(132)

36" Pipeline Construction

City of Regina
Sask., Canada
Waterworks Department
Notice to Contractors

The City intends to construct a water supply main 36" in diameter and approximately 37 miles long. The City will supply the pipe which will be steel or steel and reinforced concrete.

Tenders for trenching, laying and backfilling to commence next spring, will be called during the winter months.

Interested contractors will be shown over the route this fall and given other preliminary information on application.

A. Shattuck
Project Engineer
Buffalo Pound Lake Project

October 6, 1950.

Bids: January 30, 1950 (131)

Tenders for the Supply and Installation of Signal and Interlocking Equipment Yonge Street Subway

Sealed tenders, endorsed "Tenders for the Yonge Street Subway, Signal Equipment and Installation, Contract SG," and addressed to the Chairman, will be received by the Toronto Transportation Commission, at its office, 35 Yonge Street, Toronto, until 12 o'clock noon Eastern Standard Time on Tuesday, January 30th, 1951.

The work for which such tenders are invited consists of the supply and installation of Signal and Interlocking Equipment at specified locations on the Yonge Street Subway; as described in the Requirements for Tendering and Instructions to Tenderers.

All tenders must be made upon blank forms of tender as prepared by the Toronto Transportation Commission and included in the Contract Documents, and shall be made in accordance with the provisions contained in said documents.

The successful tenderer will be required to furnish, execute and deliver to the Commission a performance bond satisfactory to the Commission in the amount and within the time set out in the Contract Documents.

The Contract Documents including plans and specifications, are on file and may be obtained by tenderers at the office of the Toronto Transportation Commission, Rapid Transit Department, 14 Front Street East, Toronto.

Each tender must be accompanied by cash or a certified cheque on a chartered bank doing business in the City of Toronto, in the amount of Thirty-seven Thousand, Five Hundred Dollars ($37,500.00) payable to the order of the Toronto Transportation Commission.

The Toronto Transportation Commission reserves the right to reject any or all tenders and to disregard any informalities in the tenders or tendering.

Wm. C. McBrien
Chairman
TORONTO TRANSPORTATION COMMISSION

Bids: November 16, 1950 (129)

Construction of Sewage Treatment Plant and Sewer Improvements

NOTICE IS HEREBY GIVEN that pursuant to a resolution of the Town Board of the Town of Irondequoit, Monroe County, New York, separate proposals submitted in sealed envelopes shall be received and considered by the Town Board of the Town of Irondequoit, Monroe County, New York, at the office of the Town Clerk, 1280 Titus Avenue, Town of Irondequoit (Rochester 9, New York), until 7:30 o'clock P.M., Eastern Standard Time, on November 16, 1950, at which place and hour they will be publicly opened and read aloud, for the furnishing of all materials and equipment together with all labor covering general construction work, heating and ventilating work, plumbing work and electrical work for the construction of a sewage treatment plant in the North East Sanitary Sewer District in the Town of Irondequoit, Monroe County, New York, and for the furnishing of all materials and equipment together with all labor for the construction of improvements consisting of main and lateral sewers and appurtenances and other work as specified in the said North East Sanitary Sewer District in accordance with proposed contract, plans, specifications, drawings, information for bidders, proposal and estimates prepared by Ginnity & Morrison, Engineers, and approved by the Town Board of said Town, all of which are on file with the Town Clerk at his office in the Town Hall of said Town where the same may be examined during the usual business hours.

Copies of the proposed plans, drawings, instructions to bidders, specifications, form of contract, proposal and estimates may be secured at the office of Ginnity & Morrison, Engineers, 39 State Street, Rochester 14, New York, upon deposit of the following sum or sums, not refundable: Sewage Treatment Plant, general $25.00; Sewage Treatment Plant, heating, plumbing and electrical each $10.00; Sewers Section I, II and III each $15.00; Sewers Entire System $25.00; Complete Plans for Entire Project $50.00.

All proposals will be on the form furnished by Ginnity & Morrison, Engineers, prepared as set forth in Information for Bidders and enclosed in a sealed envelope bearing on its face the name and address of the bidder and the title of the work to which the proposed proposals relate. It shall be delivered to the Town Clerk of the Town of Irondequoit, Monroe County, New York, at his office, 1280 Titus Avenue, Rochester 9, New York.

Each proposal must be accompanied by a certified check made payable to the order of the Supervisor of the Town of Irondequoit of five per cent of the amount of the bid, or a bond in such amount with sufficient sureties to be approved by the Supervisor, as a guarantee, and conditioned that if the proposal is accepted the bidder will enter into a contract for the same and that he will execute such further security as may be required for the faithful performance of the contract and in the form and subject to the conditions provided in the Information for Bidders. No bidder may withdraw his bid within forty-five (45) days after the actual date of opening thereof.

The Town Board reserves the right to waive any informalities in, or to reject any and all bids and proposals and to advertise anew and to award one contract for the construction of the main and lateral sewers and appurtenances or separate contracts for portions thereof if in its judgment it shall deem it to be for the best interests of the Town so to do.

The Engineers' estimate for sewage treatment plant is $317,770.00 and for main and lateral sewers and appurtenances is $782,230.00.

BY Order of the Town Board, Town of Irondequoit.

FRED E. HUSSEY,
Town Clerk

Dated October 5 1950.

Bids: November 1, 1950 (128)

State Road Work

Sealed proposals will be received by the State Highway Department at its offices, Dover, Delaware, until 2:00 P.M., E.S.T., November 1, 1950 and at that time and place publicly opened and read for a contract involving the following approximate quantities:

Contract 913
Dover By-Pass
Kent County
Cement Concrete Divided Highway
4.465 Miles
Federal Aid Project F-10 (4)

4.8	A. Clearing
1.8	A. Grubbing
112,000	C. Y. Excavation
815	C. Y. Excavation for structures
28,000	C. Y. Borrow
5,000	C. Y. Borrow Pit Stripping
54,000	C. Y. Selected Borrow
1,350	T. Waterbound Macadam
660	T. Hot-Mix Asphalt Surface
30,000	C. Y. Cement Concrete Pavement
200	S. Y. Patching
172	C. Y. Cement Conc. Masonry (Culvert)
201	C. Y. Cement Conc. Masonry (Footings)
460	C. Y. Cement Conc. Masonry (Abut. & Pier Walls)
970	C. Y. Cem. Conc. Masonry (Superstr. & Rail)
940	S. Y. Waterproofing
369,476	Lb. Reinforcing Steel
10,070	Sqs. Wire Mesh Reinforcement
2940	Lb. Structural Steel
400	L. F. 12" R. C. Pipe
2,900	L. F. 15" R. C. Pipe
4,700	L. F. 18" R. C. Pipe
510	L. F. 24" R. C. Pipe
30	L. F. 30" R. C. Pipe
360	L. F. 8" Corr. Metal Pipe
250	L. F. 6" Vit. Clay Pipe
6.9	M. Ft. Sheet Piles
250	S. Y. Cement Conc. Gutter—Type 1
100	S. Y. Cement Conc. Gutter—Type 2
2,670	L. F. C. C. Parkway Curb—Type 1
1,950	L. F. C. C. Parkway Curb—Type 2
200	S. F. 4" C. C. Sidewalk
1,650	L. F. Wood Shoulder Curb
7	Each Catch Basins—Type P. W.
24	Each Catch Basins—Type P. W. 1
3	Each Catch Basins—Type P. W. 2
37	Each Catch Basins—Type B
6	Each Manholes
27,000	Lb. Castings
1,650	L. F. Wire Rope Guard Fence
10	Each End Post
103,000	S. Y. Topsoil
21.5	A. Seeding
16,800	S. Y. Sodding
18,650	Gal. R. C. 1 Asphalt
18,650	Gal. R. C. 3 Asphalt
520	T. Slag Chips
520	T. Crushed Chips
36,000	C. Y. Pit Run Material
10,850	S. Y. Removal Present Pavement
4	Each Junction Boxes
6	Each Adjusted Catch Basins
1	Each Adjusted Manholes
350	L. F. Ditching
24,300	Lb. Steel Castings
640	Lb. Iron Castings
9,500	L. F. Cast in Place Piles
140	L. F. Concrete Test Piles
	L. S. Muck Excavation
	L. S. Fylons
	L. S. Lighting System
50	Each Bags Extra Cement
10	T. Flake Calcium Chloride

The provisions of the Federal Aid Highway Act as amended, are applicable to this project.

The Employment Agency for this contract shall be the Delaware State Employment Service, 601 Shipley Street, Wilmington, Delaware.

Attention is called to the Special Provisions in the proposal, specifications and contract agreement.

Performance of contract shall commence within ten (10) days after execution of the contract and be completed as specified.

Monthly payments will be made for ninety (90) per cent of the construction completed each month.

Bidders must submit proposals upon forms provided by the Department.

Each proposal must be accompanied by a surety bond, certified check, or money to the amount of at least ten (10) per centum of the total amount of the proposal.

The envelope containing the proposal mus, be marked "Proposal for the construction of State Highway Contract No. ....."

The Contract will be awarded or rejected within twenty (20) days from the date of opening proposals.

The right is reserved to reject any or all bids.

Complete sets of plans and specifications may be obtained after October 16, 1950, upon receipt of five dollars ($5.00) for each set, which amount will not be refunded.

Make checks payable to the State Highway Department.

STATE HIGHWAY DEPARTMENT
By: J. Gordon Smith, Chairman
M. Allan Wilson, Chief Engineer
Dover, Delaware
October 4, 1950

U. S. Government

UNITED STATES DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-3206) will be received by Bureau of Reclamation, Elephant Butte, New Mexico, November 8, 1950, and then publicly opened for furnishing labor and materials and performing all work for the construction of Socorro-Albuquerque 115-kilovolt transmission line, Rio Grande Project, New Mexico. The work is situated between Socorro and Albuquerque, New Mexico. The transmission line will be 3-phase, single-circuit, wood-pole, H-frame type, approximately 80 miles long, and may or may not be provided with 2 overhead ground wires for the entire length, at the option of the Government. Time allowed for completion will be 270 days. For particulars, address Bureau of Reclamation, Elephant Butte New Mexico; or Building 1-A, Denver Federal Center, Denver, Colorado.

MICHAEL W. STRAUS, Commissioner.
(125)

(Continued on page 104)

OFFICIAL PROPOSALS
(Continued from page 103)

Bids: November 1, 1950 (122)

State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Highway Law and special provisions for projects financed with federal aid funds, sealed proposals will be received until ten-thirty o'clock A.M., eastern standard time on Wednesday, November 1, 1950 by Henry A. Cohen, Director, Bureau of Contracts & Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects: Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts & Accounts, Albany, N. Y., and at the office of the District Engineers noted below, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for plans and proposal forms for each contract is indicated below. A refund will be made in full to bidders for the return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
		DISTRICT No. 3				
		Wm. Robinson, Dist. Engr., 301 E. Water Street, Syracuse, N. Y.				
Onondaga	FAOT50-7 FARC50-56 FAST50-12	Interchange to the Onondaga Thruway Syracuse-Phoenix, S. H. 5274 Euclid Road S. H. 5274 Proj. No. U. I. 1071 (11)	0.54 Thwy. 0.82 Int. Rds. 1.25 Access	9" Cem. Conc. Pavt. Var. Width = 2.47 mi. Misc. Work = 0.54 mi. Hy. Sep. 2 Sp. Alpha I-Beam 168.5'; Hy. Sep. 4 Sp. Alpha I-Beam 215.83' Alpha Royalty $491.40	$55,000 Plans $25	$931,000
		DISTRICT No. 4				
		A. R. Mulligan, Dist. Engr., Barge Canal Terminal, Rochester, N. Y.				
Wyoming	10C50-57	Warsaw-Gainesville, S.H. 5400	0.07	Asp. Conc. Type 1A, Opt. 22' Reinf. Conc. Slab	$1,500 Plans $10	$27,000
		DISTRICT No. 5				
		C. R. Waters, Dist. Engr., 65 Court Street, Buffalo, N. Y.				
Chautauqua	FARC50-55 FAC 50-12	Proj. U 458(8) Penn. State Line-Dunkirk Pt. 3, S. H. 8344 Lake Shore Drive; City of Dunkirk	1.03	Asph. Conc. Type 2A, Opt. = 0.99 mi. Misc. Work = 0.04 mi.	$23,000 Plans $10	$390,000
Erie	FAC 50-11	City of Buffalo. Fuhrmann Blvd. High Level Bridge Proj. U750(5)	0.71	Bridge Substructure	$100,000 Plans $25	$1,791,000
		DISTRICT No. 9				
		F. W. Donovan, Dist. Engr., 71 Frederick Street, Binghamton, N. Y.				
Delaware	FARC50-54	Delhi-Bloomville, S. H. 747 Hobart-Stamford, S. H. 952 Proj. F746(2); F198(2)	3.53	Asph. Conc. Type 1A, Optional 46.92' Sp. I-Beam Bridge	$40,000 Plans $25	$698,000
		DISTRICT No. 10				
		J. J. Dancy, Dist. Engr., Montauk Hwy. at Little East Neck Road, Babylon, L. I., N. Y.				
Queens	FAVWE50-5	Van Wyck Expressway (Cont. S. Proj. U1085(11)	2.97	Roadside Improvement	$30,000 Plans $15	$513,000

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of "State of New York, Commissioner of Taxation & Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instructions to Bidders".

When optional types are permitted on contracts with federal funds, bidders must state in the space provided in the proposal the exact designation of the optional type upon which the proposal is predicated.

The right is reserved to reject any or all bids.

B. D. TALLAMY
Supt. of Public Works

Bids: November 2, 1950 (119)

Construction of Bridge Approach

DELAWARE RIVER
JOINT TOLL BRIDGE COMMISSION
526 Broad Street Bank Building
Trenton 8, New Jersey

NOTICE TO CONTRACTORS

Sealed proposals for the construction of the Morrisville Approach to the Delaware River Bridge from Morrisville, Pennsylvania to Trenton, New Jersey will be received by the Delaware River Joint Toll Bridge Commission at its office, 526 Broad Street Bank Building, Trenton 8, New Jersey, until eleven o'clock (11:00) A.M. Eastern Standard Time, on November 2, 1950, at which time and place all bids will be publicly opened and read aloud.

After October 5, 1950, Instructions to Bidders, form of Proposal, form of Contract, form of Performance Bond, Plans and Specifications may be examined at the office of the Commission, above address, or at the office of the J. E. Greiner Company, 1201 St. Paul Street, Baltimore 2, Maryland, and copies thereof obtained upon payment of $15.00 for each set, which amount is not returnable.

The following are approximate quantities of major items:

Roadway Excavation	2,650 C.Y.
Borrow Excavation	207,000 C.Y.
Structure Excavation	13,000 C.Y.
Steel Bearing Piles	10,200 L.F.
Class A Concrete	2,880 C.Y.
Reinforcing Steel Bars	897,000 Lbs.
Structural Steel	256,000 Lbs.
Spiral Shear Connectors	2,000 Lbs.
Reinforced Concrete Pavement	16,250 S.Y.

Each bid must be accompanied by a certified check in the amount of $100,000.00.

All checks shall be made payable to the Delaware River Joint Toll Bridge Commission, which amounts shall be forfeited as liquidated damages if the bidder or bidders fail, within ten (10) consecutive calendar days after written notice that the bidder or bidders have been awarded the contract, to enter into a written contract with the Commission in accordance with the accepted bid, and to give a Performance Bond satisfactory to the Commission, equal to one hundred percent (100%) of total amount of the contract.

The Commission reserves the right to waive any informalities in the bids received, to reject any or all bids; and to award the contract only to those experienced in this class of work, and to the bidder whose proposal is deemed by the Commission to be most advantageous to the public interest.

DELAWARE RIVER JOINT
TOLL BRIDGE COMMISSION
by: Alexander R. Miller
Chairman of Commission

Date October 5, 1950

OFFICIAL PROPOSALS

Bids: November 3, 1950 (126)

Water Supply, Distribution System & Steel Tank

EAST PETERSBURG
BOROUGH AUTHORITY
EAST PETERSBURG, LANCASTER
COUNTY, PENNSYLVANIA
SECTION 1

ADVERTISEMENT

(Notice to Contractors)

1-01. STATEMENT OF WORK.

(a) Sealed proposals will be received by the East Petersburg Borough Authority at the Municipal Fire House in East Petersburg, Lancaster County, Pennsylvania until 7:00 P.M., Eastern Standard Time, Friday, November 3, 1950, for the CONSTRUCTION OF A WATER SUPPLY AND DISTRIBUTION SYSTEM, AND AN ELEVATED STEEL TANK, at which time they will be publicly opened and read aloud.

(b) The principal items of work are as follows:

32,080 lin. ft.—4", 6" & 8" Asbestos Cement or Cast Iron Pipe
25 each—Fire Hydrants
1 each—Elevated Steel Tank, 100,000 gal. capacity
Various—Pumping, Water Softening and Chlorinating Equipment.
Also, building reconstruction; a quantity of valves, fittings, water service connections, etc.

1-02. PLANS AND SPECIFICATIONS.

(a) Copies of plans, specifications and other Contract Documents are on file and open to public inspection at the office of the Chairman of the Authority, North Lemon Street, East Petersburg, Pennsylvania, and at the offices of the Capitol Engineering Corporation West Church Street, Dillsburg, Pennsylvania, or may be obtained at the offices of the Capitol Engineering Corporation upon the payment of Twenty Dollars ($20.00) for each set, which amount is not subject to refund.

1-03 PROPOSAL GUARANTY.

(a) Type. Each proposal shall be accompanied by a certified check in an amount of not less than five per centum (5%) of the base bid, which certified check shall be payable to the East Petersburg Borough Authority in accordance with Instructions to Bidders.

(b) Return of Guaranty. Such certified checks submitted as proposal guaranty will be returned to all except the three lowest bidders within seven (7) days after opening of bids, and the remaining certified checks will be returned when the executed Contract is delivered to the successful bidder.

1-04. WITHDRAWAL OF PROPOSALS.

(a) No bid proposal may be withdrawn except as provided in the Instructions to Bidders.

1-05. JOINT PROPOSALS.

(a) Proposals submitted jointly by corporations, partnerships, and/or individuals not having a partnership relation, or combination thereof, will be rejected.

1-06. RIGHT OF WAIVER.

(a) The East Petersburg Borough Authority expressly reserves the right to reject any or all proposals, to waive any informalities or irregularities in the proposals received, and to accept that proposal which in its judgment best serves the interest of the Owner.

BY ORDER OF THE BOARD OF THE EAST PETERSBURG BOROUGH AUTHORITY, EAST PETERSBURG, LANCASTER COUNTY, PENNSYLVANIA:

Attest:
J. Wilmer Charles
Secretary

By: Walter M. Ernst
Chairman

CAPITOL ENGINEERING CORPORATION
CONSULTING ENGINEERS
DILLSBURG, PENNSYLVANIA

U. S. Government

BIDS FOR REPOWERING TOWBOAT—Memphis District, Corps of Engineers, U. S. Army, P. O. Box 287, Memphis 1, Tenn. Sealed bids will be received here until 11:00 A.M. C.S.T., October 24, 1950, and then publicly opened, for repowering the twin-screw, diesel engine propelled towboat Cotner using Government-furnished engines and accessories. $10.00 deposit required on plans. Information on request. (101)

(Continued on page 105)

U. S. Government
(Continued from page 104)

UNITED STATES DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-3208) will be received by Bureau of Reclamation, Loveland, Colorado, November 16, 1950, and then publicly opened for furnishing labor and materials and performing all work for the construction of Bald Mountain pressure tunnel and access roads, Estes Park-Foothills power aqueduct, Colorado-Big Thompson Project. The work is situated about 10 miles west of Loveland, Colorado. Principal items are approximately: 135,000 cu. yds., excavation; 685,000 lbs., steel tunnel supports; 11,300 cu. yds., concrete; 66,000 lbs., structural steel and miscellaneous metalwork; and other work. Time allowed for completion will be 650 days. For particulars, address Bureau of Reclamation, Loveland, Colorado; or Building 1-A, Denver Federal Center, Denver, Colorado.

MICHAEL W. STRAUS, Commissioner.
(124)

OFFICIAL PROPOSALS

Bids: November 8, 1950 (130)

Municipal Water Treatment Plant

CITY OF MINOT, NORTH DAKOTA

Sealed bids will be received in duplicate, at the office of the City Auditor in the City of Minot, North Dakota, until 8:00 o'clock P.M. on the Eight (8th) day of November, 1950, and then publicly opened and considered at the same time in the City Council Chambers, for the furnishing of all labor, materials and equipment, (with the exception of the major water treating equipment), required for the construction of a complete Municipal Water Treatment Plant at Minot, North Dakota, consisting of the main building structure, interior plant piping, electrical work, river intake, pumping station, well collection header, transmission lines and various equipment and accessories as specified, all of which shall be installed in strict accordance with the plans and specifications as prepared by Pfeifer and Shultz, Engineers, Wesley Temple Building, Minneapolis, Minnesota, and as are on file with the City Auditor in the City of Minot, North Dakota.

All proposals shall be made on forms similar to those attached to and made a part of the proposed contract documents and shall be addressed to:

CITY OF MINOT, NORTH DAKOTA

and endorsed:

PROPOSAL FOR: MUNICIPAL WATER TREATMENT PLANT

Copies of the specifications may be obtained from the Engineer on deposit of the sum of Fifty Dollars ($50.00). This deposit will be refunded to each unsuccessful bidder who has submitted a bid upon return of the plans and specifications in good condition within a reasonable time after receipt of bids. Additional copies of the specifications may be obtained from the Engineers upon payment of Fifty Dollars ($50.00) each, Twenty-five Dollars ($25.00) of which will be refunded upon return of the specifications in good condition within 45 days from receipt of bids. Additional sheets from the specifications may be obtained for 10 cents each. Extra plans can be obtained for $1.00 for each print.

Each bidder shall submit with his proposal a certified check drawn on a solvent bank in the State North Dakota, made payable to the City of Minot, North Dakota, in an amount at least equal to five percent (5%) of his base bid. All certified checks, except those of the two lowest bidders will be returned within thirty days and all certified checks will be returned upon the execution of a contract and the furnishing of a performance bond approved by the City of Minot. A bidder's bond, which is intended to be used in lieu of a certified check, *will not* be acceptable.

Each bidder shall also attach to his proposal, a statement showing that he is duly and regularly licensed to operate in the State of North Dakota. Such statement shall contain the number and classification of his license which is in effect. No proposal of any bidder will be considered unless he is the holder of a license in the class within which the value of the work as covered in the specifications may fall. The bidder must be the holder of such a license not less than ten (10) days prior to the date set for receiving bids in order to be considered a qualified bidder.

No bidder may withdraw his bid for at least thirty (30) days after the scheduled closing time for the receipt of bids.

The Owner reserves the right to reject any or all bids and to waive formalities. If the low bidder has not been a resident of the State of North Dakota for at least one (1) year preceding the date of receiving bids, the contract shall be awarded to the lowest qualified and responsible bidder who has been a resident of the State of North Dakota for at least one (1) year preceding the date of receiving bids, providing such bid does not exceed the bid of the lowest bidder by more than five percent (5%).

Published by authority of the City Council of Minot, North Dakota.

CITY OF MINOT, NORTH DAKOTA
By H. C. Klehn
Mayor

Attest:
R. E. Barcus
City Auditor
City of Minot, North Dakota

CONTRACTORS WATCH THIS SECTION

for New Projects

Publish your announcements thru the "Proposal Section" of Engineering News-Record and get their bids.

OFFICIAL PROPOSALS

the low bidder has not been a resident of the State of North Dakota for at least one (1) year preceding the date of receiving bids, the contract shall be awarded to the lowest qualified and responsible bidder who has been a resident of the State of North Dakota for at least one (1) year preceding the date of receiving bids, providing such bid does not exceed the bid of the lowest bidder by more than five percent (5%).

Published by authority of the City Council of Minot, North Dakota.

CITY OF MINOT, NORTH DAKOTA
By H. C. Klehn
Mayor

Attest:
R. E. Barcus
City Auditor
City of Minot, North Dakota

READ THE OFFICIAL PROPOSAL COLUMNS OF ENGINEERING NEWS-RECORD THIS WEEK AND EVERY WEEK

EMPLOYMENT

(Continued on pages 106 & 107

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (18)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

CIVIL SERVICE

DRAFTSMAN-ABILITY to layout sewer and watermain, paving, storm sewer districts, and other drafting work required by a municipality. Application should give salary required, education, experience and references. Jay W. Bliss, City Manager, Minot, North Dakota.

WANTED: CITY of Sheboygan, Wisc., pop. 42,000, seeks a city engineer. Must be a graduate civil engineer. Address all letters to Mayor W. M. Sonnenburg giving all details of past experience and training.

POSITIONS VACANT

WANTED, SEVERAL engineering graduates under 35, by large industrial fire prevention organization for field work involving periodic inspections and special consulting service. Electrical and Chemical engineers preferred. Permanent. Openings in United States and Canada. P-7287, Engineering News-Record.

CONSTRUCTION COMPANY, operating nationwide, specializing in structural concrete, such as bridge piers and their foundations and mass concrete such as dams, require A No. 1 thoroughly experienced engineer familiar with present-day costs capable of preparing comprehensive and complete estimates. To be considered, complete information must be furnished. Our organization has been advised of this advertisement. P-6974, Engineering News-Record.

WANTED: ENGINEER, Registered in Penna., capable of design and supervision of sewage treatment plants and water works. Also familiar with general municipal engineering problems. Applicant must possess a pleasant personality and capable of meeting with clients. For consideration, complete information, such as age, qualifications and salary desired, must be furnished if, first reply. Henry F. Huth, 53 N. Duke St., Lancaster, Pa.

DETAILER WANTED. Structural steel and ornamental iron. Write Norfolk Iron & Wire Works, P. O. Box 1861, Norfolk, Va.

(Continued on page 106)

Additional Positions Vacant Advertising on pages 106 & 107

CHIEF ENGINEER WANTED

Well established major construction company operating large general heavy construction and building contracts, largely in northwestern United States and Alaska, has opening for top flight engineer. Must be familiar with estimating, bidding, negotiating, operations, costs, and general contract administration. Proven broad experience essential. Opportunity for permanent responsible position to qualified man, age 30 to 50. Travel limited to short term administrative trips. Commensurate top salary. Send complete resume and photo. All applications acknowledged.

P-7915, Engineering News-Record
68 Post Street, San Francisco 4, Calif.

ELECTRICAL ENGINEERS

Graduates, experienced in design engineering and economic studies of steam-electric power plants and high voltage substations. Also, knowledge of power system relaying and preparation of specifications for switchboards and switchgear.

P-7541, Engineering News-Record
330 W. 42nd St., New York 18, N. Y.

ENGINEER

with experience in Development and Design of Centrifugal Pumps for manufacturing plant in New England. State qualifications and references.

P-7858, Engineering News-Record
330 W. 42nd St., New York 18, N. Y.

Engineers Wanted

Civil—Electrical—Mechanical—Structural

Apply KAISER ENGINEERS
Division of Kaiser Industries, Inc.
1924 Broadway Oakland, California

SEARCHLIGHT SECTION

EMPLOYMENT • BUSINESS • OPPORTUNITIES • EQUIPMENT—USED or RESALE

UNDISPLAYED RATE:
(Not available for equipment advertising)
$1.20 cents a line, minimum 4 lines. To figure advance payment count 5 average words as a line.

INDIVIDUAL EMPLOYMENT WANTED undisplayed advertising rate is one-half of above rate, payable in advance.

PROPOSALS, $1.00 a line an insertion.

INFORMATION.

BOX NUMBERS count as 1 line additional in undisplayed ads.

DISCOUNT of 10% if full payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals).

DISPLAYED—RATE PER INCH:

The advertising rate is $11.50 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

AN ADVERTISING INCH is measured ⅞ inch vertically on one column, 3 columns—30 inches —to a page. E.N.R.

NEW ADVERTISEMENTS received by October 23rd at the New York Office, 330 W. 42 St., N. Y. 18, will appear in November 2nd issue subject to space available.

SUPERINTENDENT

Wanted in California

Must be thoroughly capable of assuming direction of all field work of a well established contracting firm specializing in industrial construction. Must be most conscious, with a background of several years building for industry under highly competitive conditions; active, resourceful, a proven leader. Will look on this as a golden opportunity to make the most of his capabilities, with the possibility of an eventual interest in the firm. This while working and living in the country's finest climate and fastest growing industrial center. Replies held in confidence.

P-7967, Engineering News-Record
1111 Wilshire Blvd., Los Angeles 17, Calif.

WANTED STRUCTURAL DESIGNER

Overseas assignment with American oil company in South America. Must have degree and over five years' experience structural design. Will be required to design, draft, and check structures of steel, reinforced concrete, or timber, including trestles, pipe supports, wharves, towers and refinery units. Will make field investigations and recommendations for necessary repairs. Will be expected to train lower-rated employees. This is a regular staff job having retirement plans and other benefits.

Write giving age, education, marital status, and detailed experience resume.

Box 308-D Radio City Station
New York 19, New York

STRUCTURAL ENGINEERS

California offers long term professional employment to men with more than 5 years structural engineering including 2 years in charge of structural design of class "A" buildings.

Salary up to $584.

Write today. Recruitment Section, Dept. SE-1,

STATE PERSONNEL BOARD
1015 L Street Sacramento, California

ESTIMATOR

Progressive middle-western general contractor needs experienced architectural-structural estimator of proven ability on permanent basis. Good salary and profit-sharing arrangement. Include resume and photograph with application.

P-7943, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

ENGINEERS

Major oil company operating in the Middle East requires graduate engineers in numerous classifications, including:

CIVIL
ASST. CIVIL
MECHANICAL
ASST. MECHANICAL
ELECTRICAL
COMMUNICATIONS
FIELD CONSTRUCTION

Positions cover various fields of specialization in the above classifications. Vacancies are for both experienced and inexperienced men. If interested write giving complete outline of experience, education and personal history.

P-7941, Engineering News-Record
330 W. 42nd St., New York 18, N. Y.

ENGINEERS - DESIGNERS DRAFTSMEN

We are engaged on highway, bridge, foundation and general structural engineering work, and during the next few weeks anticipate expanding our organization in Pittsburgh and Philadelphia. Give brief record of training and experience in first application with salary required, age and when available.

P-8006, Engineering News-Record
330 W. 42nd St., New York 18, N. Y.

WANTED

GRADUATE CIVIL ENGINEERS WITH OR WITHOUT EXPERIENCE FOR HIGHWAY AND BRIDGE LOCATION, DESIGN AND CONSTRUCTION

Starting Salary $310 per Month
Opportunity for Permanent Civil Service Positions
Give age, experience and education

G. T. McCOY,
State Highway Engineer
Division of Highways
P. O. Box 1499
Sacramento, California

ENGINEER WANTED

Engineer—Capable of taking charge of Drafting Room for office engaged in design of sewage collection systems, water distribution systems, sewage treatment plants and filtration plants. Location—Richmond, Virginia. Submit complete data on education, experience and salary required.

P-7876, Engineering News-Record
330 W. 42nd St., New York 18, N. Y.

STRUCTURAL STEEL DRAFTSMEN
DETAILERS AND CHECKERS
ONLY TOP RATE MEN
With Fabricating Shop Experience
Write Qualifications
BERZIN, GEIST & LICHTENBERG ENGINEERS
213 East 38 Street, New York 16, N. Y.

POSITIONS VACANT

(Continued from page 105)

STRUCTURAL DESIGNER—Draftsman: Three to Five years experience on buildings and industrial structures; small upstate New York office; large program. P-7927, Engineering News-Record.

WANTED: GENERAL FOREMAN familiar with concrete form work and steel erection for work in New Jersey. Permanent position for right man. Salary commensurate with his capacity to perform. Mail complete details. P-7931, Engineering News-Record.

DESIGN DRAFTSMAN for Mechanical Department large Copper Company Chile, South America. Thorough experience required design, detail, and checking of reinforced concrete and structural steel buildings, bridges, foundations and retaining walls. Experience mechanical design desirable but not essential. Graduate engineer with some practical experience U. S. preferred. Three-year contract, transportation both ways and salary while traveling paid by company. In reply give complete details. P-7936, Engineering News-Record.

STRUCTURAL STEEL Detail Draftsmen and Checkers. Must be experienced. All type structures. Send complete written information. Samborn Steketee and Associates, 1214 Cherry St., Toledo 2, Ohio.

WANTED: BRIDGE Designer; structural draftsman; experienced checker; highway engineer experienced in traffic interchange design. Give complete details including salary desired. P-7980, Engineering News-Record.

EMPLOYMENT SERVICE

SALARIED PERSONNEL $3,000-$25,000. This confidential service established 1920, is geared to needs of high grade men who seek a change of connection under conditions assuring, if employed, full protection to present position. Send name and address only for details. Personal consultation invited. Jira Thayer Jennings, Dept. L, 241 Orange St., New Haven, Conn.

POSITIONS WANTED

CIVIL ENGINEER: Contractor-Engineer Representative or Resident Engineer. Broad field and office experience, general construction, highways, airports, municipal and major defense projects. Reports. Eighteen years on responsible assignments in Latin America, West Indies and Pacific Islands. Fluent Spanish. Willing to travel. Prefer South or foreign but any location considered. Reliable, active and in excellent health. Age 43. Personal interview suggested. Registered P. E. N. Y. Now in New York City. FW-7802, Engineering News-Record.

(Continued on the opposite page)

SALES ENGINEER

ENGINEERING and CONSTRUCTION

Large industrial engineering and building firm has opening in Eastern Office for qualified Sales Engineer with contacts and recent experience in selling engineering and construction services.

Submit complete information stating experience, education, personal contacts, references, date available and salary requirement. All replies will be treated confidential.

P-7642, Engineering News-Record
330 W. 42nd St., New York 18, N. Y.

WANTED—SALES ENGINEER

Experienced in blocks, concrete, steel, masonry and plaster supplies. Age 26 to 38.

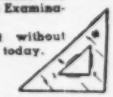
RINKER MATERIALS CORP.
WEST Palm Beach, Fla.

STRUCTURAL ENGINEERING

A Course of Instruction by Mail

FOR FORTY YEARS our courses have helped thousands to better positions and to pass State Board Examinations.

Information sent without obligation. Write today.



WILSON ENGINEERING CORP.
College House Offices - Dept. E.
Harvard Sq. Cambridge, Mass.

ESTIMATING SERVICE

Any Trade and Type of Project
Literature and Sample on request

Construction Survey Cooperative
101 Park Ave., New York 17, N. Y.
MUrray Hill 5-7317 Founded 1922

SUBMERGED PIPE LINE CONSTRUCTION

BOYCE COMPANY
Phone 3-2530 Clearwater, Fla.

Our Craftsmen do

INSTRUMENT REPAIR AND OVERHAUL

- Complete department—handles all makes.
- Experienced craftsmen do all work.
- Includes thorough overhaul, cleaning, oiling and adjustment.
- Precision work guaranteed.

DAVID WHITE COMPANY
317 W. Court St. • Milwaukee 12, Wis.

INSTRUMENTS FOR RENT

We rent transits and levels on a monthly or yearly basis. Reasonable rates. All instruments are fully guaranteed in first class working order.

DAVID WHITE COMPANY
317 W. Court St. • Milwaukee 12, Wis.

POSITIONS WANTED

(Continued from the opposite page)

CIVIL ENGINEER—P.E. in N.J.—17 years experience in layout, design and Construction on Petroleum bulk plants, service stations, laboratories, utilities, purchasing and expediting. Administrative ability. Desire position in new construction and plant maintenance. PW-7909, Engineering News-Record.

MASTER MECHANIC, service manager or shop foreman, age 41, eighteen years experience as supervisor of repair, maintenance and operation of heavy equipment, best of references as to ability and character, location immaterial. PW-7910, Engineering News-Record.

OFFICE MANAGER - Executive Secretary. Young woman. 7 yrs. field and home office experience (steno., bookkeeping, public relations, purchasing, Govern. records, payrolls, etc.) Assume complete responsibility. Travel U. S. or foreign. References. PW-7886, Engineering News-Record.

ESTIMATOR, ENGINEER. Fully experienced, Sewer, Water, Bridge and allied construction. Interested in a salary and profit-sharing proposition. PW-7919, Engineering News-Record.

B.S. DEGREE in Electrical Engineering graduating Nov. 20. Desire position in Sales Engineering field. Two yrs. direct selling experience. PW-7953, Engineering News-Record.

ARCHITECTURAL DRAFTSMAN, Structural Designer wants position with industrial commercial or construction company. PW-7960, Engineering News-Record.

GENERAL SUPERINTENDENT or Superintendent, age 46, married, West Pointer, 25 years experience in complete charge all type heavy construction. Supervised successfully four earth fill dams, two concrete dams, bridges, large sewers, tunnels, foundations, water works, flood control, two foreign projects. Superb record and reference. PW-7934, Engineering News-Record.

ENGINEER: 25 years experience. Presently chief engineer of large firm engaged in industrial engineering and construction. Available anywhere in United States on reasonable notice. PW-7979, Engineering News-Record.

GENERAL SUPERINTENDENT—Experienced heavy construction, industrial plants, power houses, earth work and concrete dams, bridges and caissons. Complete charge of all field operations. PW-7972, Engineering News-Record.

BUILDING CONSTRUCTION Engineer — 30 years experience. Thoroughly understands estimating, pricing, subletting and office work. Desires position of responsibility. PW-7689, Engineering News-Record.

CONSTRUCTION MANAGER

AVAILABLE SOON

BRIDGES, FOUNDATIONS
SEWAGE and WATER WORKS

PW-7968, Engineering News-Record
330 W. 42nd St., New York 18, N. Y.

WANTED

FOR SALE

(Additional For Sale ads on pages 108-111)

WANTED

BEARINGS

NEW, SURPLUS, SLIGHTLY USED

Wholesale by the tons for import to the Philippine Islands

Write quantity and price

JOHN RICH
3031 N. 16th St. Phila. 32, Pa.

LEYTE SAMAR SALES COMPANY
Tacloban, Leyte,
Philippine Islands

SHEET PILING LARSSEN

2000 TONS AVAILABLE

October Rolling to
Clients Specifications

KURT ORBAN CO. INC.
21 WEST STREET, NEW YORK CITY

WE BUY OR SELL

All Types of
TRENCHING MACHINES

AIR COMPRESSOR RENTAL CO.
19615 NOTTINGHAM RD. CLEVELAND
Renmore 1-8000

FOR SALE

1—Bay City Model 45, with backhoe, and 45' crane boom w/tagline and ¾ yd. clam dig. bucket $8000.00
1—TD18 Bulldozer $4700.00

JOSEPH HALPERN, *Contractor*
33-49 Vernon Boulevard, L. I. C. 6, N. Y.
Tel. RA 6-6891 Home tel. Navarre 8-8488

WANTED

1—Mixer Mobile
1—Bulk Cement Bin
1—3 Compartment Aggregate Bin

W-7951, Engineering News-Record
330 W. 42nd St., New York 18, N. Y.

FOR SALE

2 Tournawagons, Model W210

ZARA CONTRACTING CO., INC.
15 Prospect Ave. Hewlitt, L. I.
Phone: Lynbrook 9-0377

WANTED

A 3500 A or B Manitowoc Speed Crane not over 8 years old. State price and where it can be inspected.

CRANE SERVICE, INC.
1020 S. 41st Street, Milwaukee, Wisconsin

Tractor & Shovel Parts w. great savings

for D-7: sprockets—idlers—final drive
for TD-14: chains—track shoes—frames, etc.
for HD-7: track shoes
original AMSCO 1-½ cy Digger
Haiss ½ cy digging clamshell bucket

BENDIX MACHINERY CO. INC.
401 Broadway, N. Y. 13, *Tel: Canal 6-5693*

• STRUCTURAL STEEL SHAPES •

New and Used—Immediate Delivery

At present our inventory of steel shapes and forms includes a full line of both new and used steel especially for heavy construction work. 4" I beam to 36" Girder Beam. 14" Columns 287#/398#

BEARING PILE SECTION

Stock list on request. Write, wire or phone.

HY DRACHMAN STEEL CORPORATION

Warehouse
14-23 34th Ave., Astoria L. I., N. Y.
Astoria 8-8023; 8-4484-5

Sales Office
563 E. Tremont Ave., New York City, N. Y.
Cypress 9-5440-1

FOR SALE
WOOLDRIDGE EQUIPMENT
CALIFORNIA

1—Trailbuilder Model TD-7 for Cat. D-7, Serial No. 4618.
1—Scraper Model BBU with 4—16.00 x 24 tires, Serial No. 16798.
1—Bulldozer Model BD8 for D-8, Serial No. 15807.
1—Standard Dary Ripper Model RS-3, Serial No. 339—Slightly Used.
1—Trailbuilder Model TD-8 for D-8, Serial No. 93000.
All Cable Operated
1—Model 210 VD Air Compressor mounted on 4 pneumatic tired wheels, Serial No. 4V-3042.

Apply LOUDEE STEEL CORP.
1000 Smith Street, Montreal 3, Canada

FOR SALE AT BARGAIN PRICES

1—Power Sub-Station complete with 2 187 KVA Transformers
2—Wiley Steam Whirleys—Model 100 with 23'6" & 36' Gantrys
1—900 CFM Chicago Diesel Portable Pneumatic Tired
5—Gasoline Locomotives, Standard Gage, 8 & 12 Tons
8—Electric Motors: 1-1½ HP; 1-2 HP; 1-10 HP; 1-250 HP; 6 4-300 HP
25—Pumps—Various Sizes up to 12000 GPM
1—Caterpillar Diesel D-17000 Engine Complete Clutch & Pulley Drives
1—10 Ton FWD HD Platform truck

Also miscellaneous other equipment from large Mississippi River Lock Project.
List and prices upon application.

RIVER CONSTRUCTION CORPORATION

P. O. Box 21 GRANITE CITY, ILLINOIS 'Phone Illinois 3130

FOR SALE OR RENT

1—N. W. SHOVEL

¾ c.y. *Model 25*
Optional as Crane or Backhoe

WILLIAMS CONSTRUCTION CO.
Box 145 Middle River Baltimore 20, Md.
Phone: Essex 1310

FOR SALE—SHEETING

400 18 ft. pieces of Armco black steel flange type sheeting with pulling holes and 4 driving heads in new condition. Price—$3500.

NANCE & VIVADELLI CO.
2420 WILSON BLVD. ARLINGTON, VA.

WIRE MESH

150 Rolls No. 6 Gauge 6 x 6 x 6 x 6—5 ft. x 150 ft.
Price—$4.50 per 100 sq. ft.

REINFORCING RODS

1071 pieces ½" x 30'
593 pieces ½" x 40'
614 pieces ⅝" x 30'
170 pieces ⅝" x 40'
567 pieces ¾" x 30'
153 pieces ¾" x 40'
Mild Steel

Price—$7.50 cwt.

All prices FOB, K. C., Mo.
Immediate delivery

SOUTHWEST STEEL Corp.
3401 Truman Rd. Kansas City, Mo.

FOR SALE

1000 Ton Asphalt Plant
30 Ton Capy Gantry Crane, Electric
60 Ton Capy Asphalt Plant
800-500-315 Ft Air Compressors
25 Ton Capy Whirleys, Steam
Wide Gauge all electric 2 Yd Crane
6-7-8 Yd Walker Type Draglines
15 Ton Northwest Truck Crane
Locomotive Cranes, Diesel, Gas, Steam
3 Compt Bins, Scale & Batchers, 120 to 200 Ton
100 Ton Capy Derrick Scow
Crawler Cranes, ¾ Yd to 10 Yd Capy
Locomotives and Railroad Cars.

"STONE THE CRANE MAN"
1132 Prudential Bldg. Buffalo 2, N. Y.

---

133 SURPLUS MACK TRUCKS

10 wheel, chassis & cab
● Orig. cost $14,000 each
● SACRIFICING 4,500 each
25 H.R. (14) Diesels $5,500.
● Almost New

● THE MARTIN CO. ●
Queens Blvd. at 58th St., Woodside, L. I.
HA 9-9210 (Ask for Mr. Martin)

NEW JACKS

60 ton Watson-Stillman Hydraulic
60% off list price
Also Chicago Pneumatic and Ingersoll-Rand
Equipment for below list prices.

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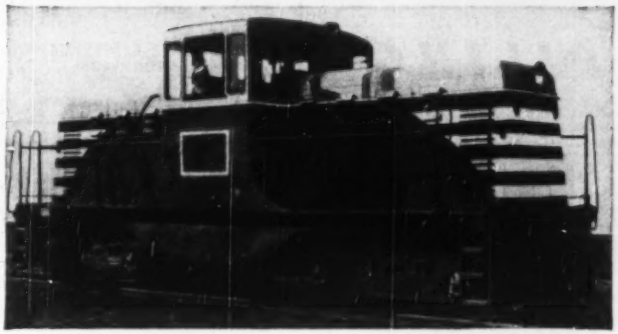

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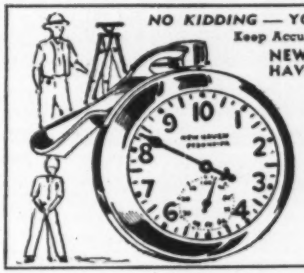

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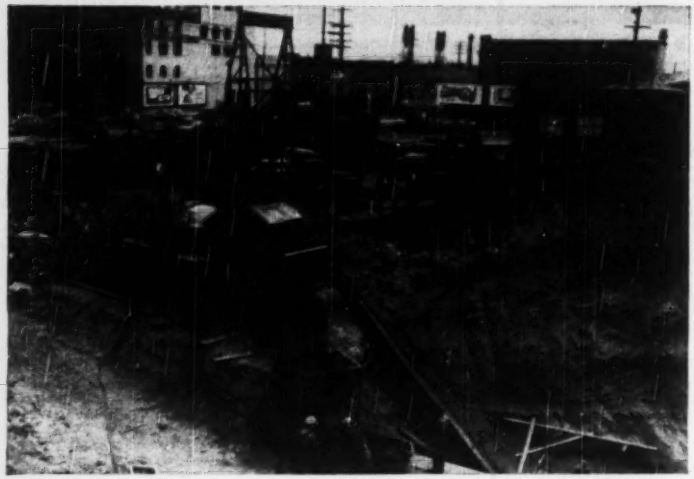

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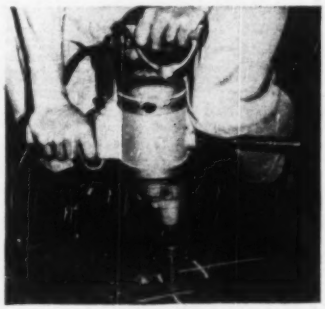

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(*Continued on page 117*)

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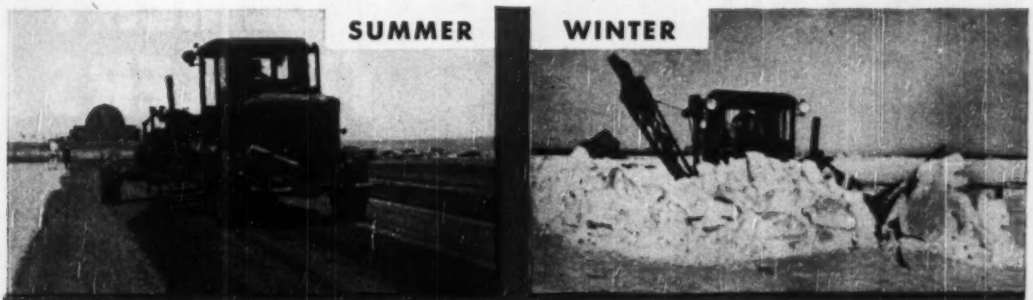

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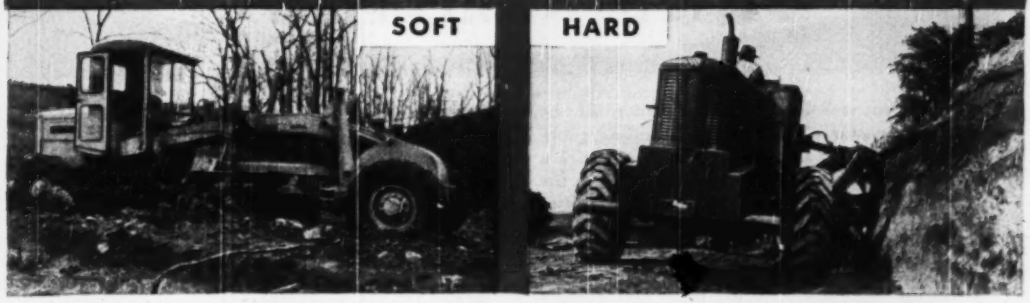

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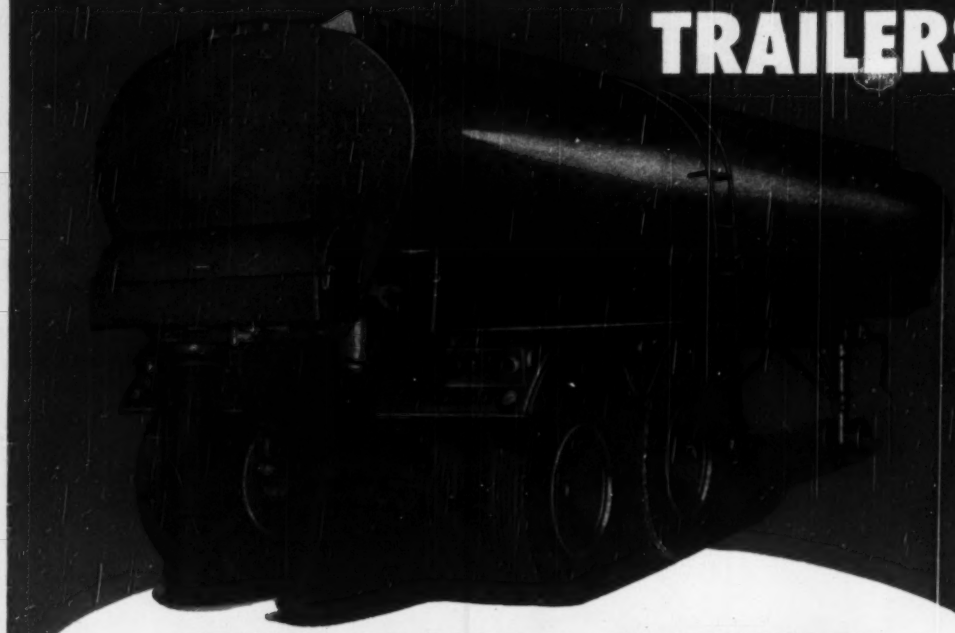

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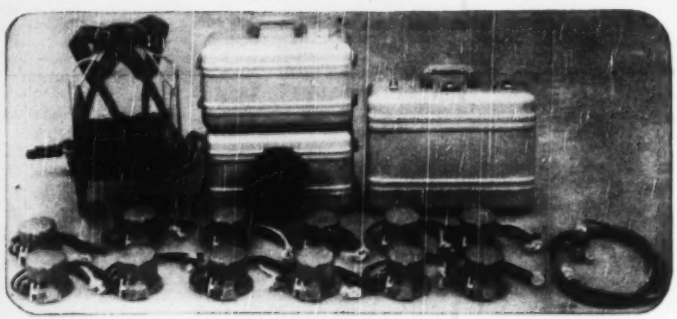
HOW DO *YOU* FIND BEDROCK?

THERE IS AN EASIER WAY

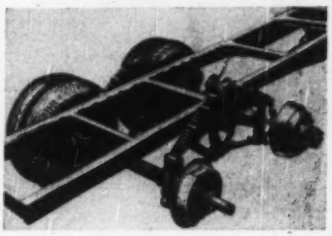
with **CENTURY CONSTRUCTION SEISMOGRAPH**



Now you can locate bedrock and plot its contour in minutes instead of hours. To learn more about this new and PROVEN method of bedrock finding without detailed and costly drilling, write *1337 North Utica*

Century GEOPHYSICAL CORPORATION
TULSA, OKLAHOMA
EXPORT: 149 Broadway, New York

said to inhibit rust and corrosion, soften coolant water to stop scale deposits, and to filter rust, scale, and foreign particles from coolant. A controlled amount of water flows continuously from cooling system into the Fram unit where it contacts chemicals for softening, and then passes through the filtering media where solids are removed.—Fram Corp., Providence, R. I.

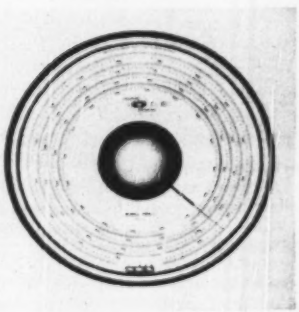


Trailing Axles

Heavy-duty trailing axle for increasing truck capacity is built for use with 3 to 6-ton trucks. The Model D will offer an 18,000-lb capacity, permitting the hauling of heavy-duty tractors, shovels, cranes, and other heavy equipment.—Little Giant Products, Inc., Peoria, Ill.

Aluminum-Insulation

Insulation and vapor barrier material (Dryfol) consists of a tough, durable Kraft paper with aluminum foil (Alfol) on one or both sides. Dryfol is said to be fire and wind resistant, vermin and rust proof, odorless, and easily installed. It is recommended for side walls, crawl spaces, attics, and under ground floors. Each roll contains 250 sq ft, and is available in 17, 25, 33, and 36 in. widths.—Reflectal Corp., 155 E. 44th St., New York 17, N. Y.

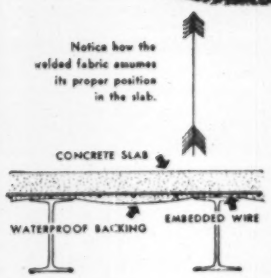


Micro Barometer

Super-sensitive aneroid barometer is said to be accurate to 0.001-in. of mercury. Accurately etched graduations provide instantaneous readings without requiring corrections for temperature and latitude. Model PMB-1 has

(*Continued on page 120*)

You speed construction and cut costs with Pittsburgh Steeltex Floor Lath



Pittsburgh Steeltex Floor Lath speeds construction and cuts costs because it permits you to pour your floors while continuing complete operations on the floor below. You get a stronger slab because it is properly reinforced with welded wire mesh—properly cured because the moisture is retained by waterproof backing. For further detailed reasons for specifying *Steeltex*, see Sweet's or write for catalog D.S. 133, Dept. ENR, Pittsburgh Steel Products Co., Grant Building, Pittsburgh 30, Penna.

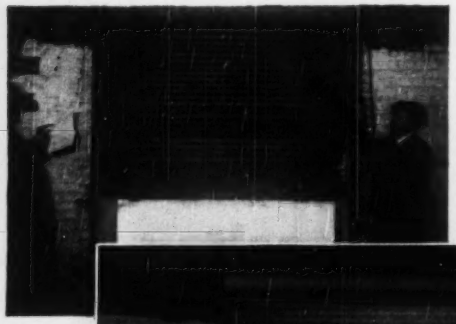
Pittsburgh Steel Products Company

A Subsidiary of Pittsburgh Steel Company

Pittsburgh 30, Pa.

47 YEARS OF SERVICE

and a few repairs make it ready for 47 more



The door at left has been in continuous service since 1903—for 47 years! The picture was taken this year, just before curtain slats were replaced and a few minor repairs made. In the photo below, the door is ready for many more years of efficient service and protection.

Another User Proves the Extra Value of KINNEAR Steel Rolling Doors

You can find many similar records of long service for these famous doors in the Kinnear files—more proof that their interlocking steel-slat construction, *originated by Kinnear*, combines rugged durability and protection with smooth action and space-saving efficiency.

Kinnear Rolling Doors open straight upward and coil completely out of the way above the lintel. All surrounding floor, wall and ceiling space is fully usable at all times, because the doors need no extra room for opening and closing action.

When closed, these all-steel doors give an extra measure of protection against fire, theft, intrusion, wind and weather, or accidental damage.

Kinnear Rolling Doors, built to fit openings of any size, are easily installed in old or new buildings. Equipped for operation by hand-lift, chain, crank or electric motor. With Kinnear Motor Operators, they offer the added convenience of push-button control, plus remote controls at any number of points, if desired. Write today for complete information.

Saving Ways in Doorways
KINNEAR
ROLLING DOORS

The KINNEAR MFG. COMPANY
FACTORIES
1820-40 Fields Ave. • Columbus 16, Ohio
1742 Yosemite Ave. • San Francisco 24, Calif.
Offices and Agents in Principal Cities

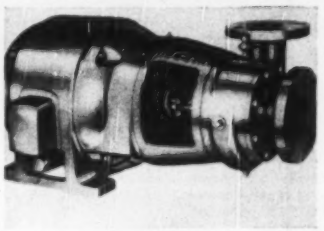
a range from 24.80 to 31.00 in. of mercury. Other ranges are available on request.—American Paulin System, 1847 S. Flower St., Los Angeles 15, Calif.

Trailer-Type Spreader

Wausau trailer-type spreader emphasizes operator safety while providing positive control of thickness, width, and direction of spread. It is a low-cost self-contained unit that can be attached to any dump truck. Spread varies from 8 to 20 ft depending upon truck speed and fender setting. Thickness is regulated by a lever controlling hopper jaws. Hopper capacity is 2 ft. Total weight including truck hitch is 410 lb.—WAUSAU IRON WORKS, WAUSAU, WIS.

Case-Hardening Compound

Fast-acting compound is said to improve the structural quality, hardness, and wear resistance of both steel and cast iron. Hard'N'Tuff provides a nitriding, chromizing, and carburizing effect to metal surfaces by its application on properly heated surfaces.—Doughty Laboratories, 299 Madison Ave., New York 17, N. Y.



Centrifugal Pumps

The Myers pumps are of the horizontal single-suction single-stage type with enclosed impellers. These general-duty pumps are built in three styles—motor mounted or close coupled, direct connected with base plate and coupling, and belt-driven. They are recommended for pumping 10 to 600 gpm against total heads up to 280 ft at temperatures up to 220-deg F.—THE F. E. MYERS & BRO. CO., ASHLAND, OHIO.

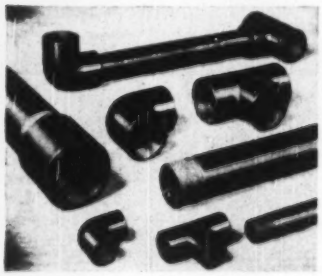
Lubricant Pumps

Air-operated high-pressure lubricant pump is available in three models that will deliver lubricant from 25,

35, or 50-lb original containers. Heart of the 711 pumps is a sealed-in air motor, unconditionally guaranteed for 27 months. The 711 pump is 31¾ in. high; the shield is 17½ in. in diameter, and the base is 20½ in. sq. The 711-A is mounted on a pivot-swing dolly instead of a castered base. The 711-B is a stationary unit without base or dolly.—ALEMITE DIV., STEWART-WARNER CORP., 1826 DIVERSEY PARKWAY, CHICAGO 14, ILL.

Lightweight Utility Drill

The Model S17 utility drill is supplied in a carrying case with a complete kit of drill accessories including a 14-in. drill steel and three assorted-size rock bits, a star drill adapter, and 25 ft of air hose. The S17 is a self-rotating pneumatic hammer drill weighing 19 lb. A special stop-rotation features converts the S17 to a lightweight chipping hammer or pick.—Gardner-Denver Co., Quincy, Ill.

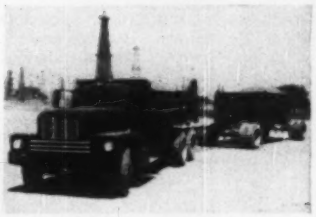


Threaded Plastic Pipe

Lightweight plastic pipe is now available in threaded sections together with molded plastic fittings which facilitate installation of standard or intricate systems. Carlon TL can be threaded and cut in the conventional manner with standard pipe-fitting tools. The pipe is supplied in standard pipe diameters from ¼ to 2 in.—Carlon Products Corp., 10153 Meech Ave., Cleveland 5, Ohio.

Powered Pipe Machine

A choice of wheel-and-roller cut-off or knife cut-off is available for the Toledo 999 Super Model 2-in. powered pipe machine. The machine features quick-opening die heads, thread gage to indicate length of thread being cut, and flexible oil line. Powered by a ½-hp motor, speed is automatically adjusted to the load.—TOLEDO PIPE THREADING MACHINE CO., 1445 SUMMIT, TOLEDO, OHIO.



Heavy-Duty Truck

Lightweight, heavy-duty truck is powered by a 198-hp Continental engine. The C12 has a 191-in. wheelbase. Driving axle is a full-floating double-reduction unit with a rated capacity of 20,000 lb. Truck has a Fuller 5-speed transmission and a C-B 3-speed gear-splitter auxiliary transmission. It can be supplied with a single driving axle plus a third axle, or a dual-gear drive.—COOK BROS. EQUIPMENT CO., 1815 N. BROADWAY, LOS ANGELES 31, CALIF.

New Product Briefs

Stripping tool removes outer cover from Aeroquip double and single wire-braid hose prior to attaching fittings. Can be used in shop vise, lathe chuck, drill press, or revolving chuck of hose-line assembly machine. Maker: Aeroquip Corp., Jackson, Mich.

Rubber work shoe is available in full range of sizes. Not an overshoe, it has plain or steel safety toe. Made with steel shank for extra safety and wear, it is 6-in. high and of the Bleucher style. Maker: Industrial Products Co., Philadelphia 44, Pa.

Alcohol-type anti-freeze (Freez-Rem) features Speconite rust inhibitor said to prevent rust and corrosion of metals, and to not damage rubber hose or hose connections. Maker: Speco, Inc., Cleveland 9, Ohio.

Portable drum rack for transporting 55-gal drums has a Tilt N' Lock feature which assures easy tilting and positive locking in any position. Maker: Penco Engineering Co., San Francisco 7, Calif.

Off-the-road tire developed by Goodrich is especially recommended for front wheels where easier steering is desired. Available in three sizes – 12.00-24, 16-ply; 13.00-24, 18-ply; and 14.00-24, 20-ply.

STOP
THAT LEAK FOR GOOD

9 SIKA COMPOUNDS TO END REPAIR PROBLEMS ON CONCRETE AND MASONRY

FOR PRESSURE LEAKS
(SIKA No. 2, SIKA No. 4A) Leaks are easily sealed on the exposed side with quick-setting SIKA mortar. It is not necessary to relieve pressure. SIKA No. 2 is used against heavy pressure or bleeders. SIKA No. 4A against seepage or moderate pressure.

FOR JOINTS OR CRACKS
(IGAS JOINT SEALER, SIKA CAULKING) IGAS JOINT SEALER seals even against pressure and continual movement. Will not sag, crack, dry out, become brittle or lose adhesion in work above grade. SIKA CAULKING is used where highest resistance to atmospheric change is desired.

FOR EXTERIOR REPAIRS
(SIKA KOTE, SIKA TRANSPARENTS) SIKA KOTE, a protective and decorative coating in 9 colors and white, prevents moisture penetration on concrete and masonry structures. SIKA TRANSPARENTS render brick structures water-repellent and preserve their appearance.

FOR NON-LEAKING SURFACES
(SIKACRETE, SIKA KOTE) Water-resistant SIKACRETE mortar is used where every cement-coat work is indicated. Economical, easy to apply. SIKA KOTE prevents penetration of ground moisture.

FOR GUNITING OR PRESSURE GROUTING
(SIGUNIT, SIKA No. 4, PLASTIMENT) For quick work against leaks or in tidal areas, SIGUNIT in mortar prevents washouts. SIKA No. 4 (GROUT SIKA) accelerates set, increases cohesion of mortar and adhesion of grout to rock.

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"15 STEPS TO BETTER CONCRETE CONSTRUCTION"

This new 12-page illustrated book discusses 15 materials of construction and maintenance. Complete with product descriptions and composition, specific uses, contributing properties, and Architect's Specifications. Write today for your free copy.

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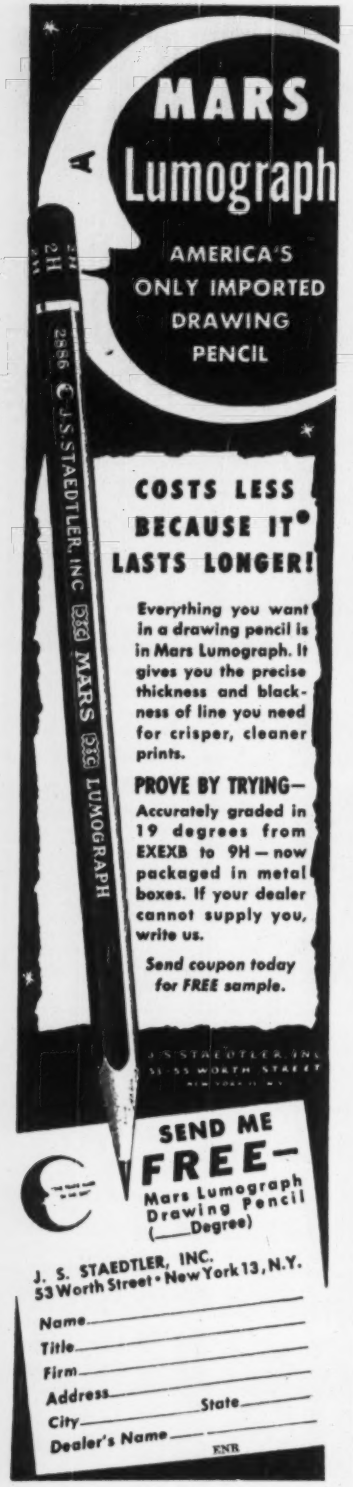
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AMERICA'S ONLY IMPORTED DRAWING PENCIL
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Everything you want in a drawing pencil is in Mars Lumograph. It gives you the precise thickness and blackness of line you need for crisper, cleaner prints.
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MANUFACTURERS' PUBLICATIONS

Snow-Plow Bulletin—Complete line of Baker snow plows for Allis-Chalmers tractors and motor graders is described in a 6-p bulletin. Construction details, application recommendations, and complete specifications are contained in Bulletin 890.—THE BAKER MFG. CO., SPRINGFIELD, ILL.

Worm-Gear Drives—Three basic types of worm-gear drives are illustrated, described, and tabulated in Booklet 2324 (80 pp). Each is available in 10 different sizes for fractional or large horsepower, and in a variety of speed ratios. The bulletin lists various features, and contains typical drive problems, with their solutions, to assist in selecting the proper drive for a specific duty.—LINK-BELT CO., 307 N. MICHIGAN AVE., CHICAGO 1, ILL.

Vibrating Feeder, Conveyor—Two new vibrating machines, said to incorporate new principles for producing vibratory motion, are described in bulletins now available. The Vibra-Feeder employs a mechanical means of operation. The Vibra-Veyor is said to produce balanced mechanical operation without counterweights. It is also said to produce from lengths up to 200 ft, activated by a single vibrator. Complete details are listed in Bulletins 134 and 135.—HEWITT-ROBINS, INC., ROBINS CONVEYORS DIV., 270 PASSAIC AVE., PASSAIC, N. J.

Stationary Air Compressors—Bulletin describes the T series of stationary air compressors. This series consists of two lines, one designed for normal pressures of 100 to 125 lb; the other rated at 200 lb for continuous service, and up to 250 lb on intermittent pump-up service. The bulletin shows various sizes and models and gives cross-sectional views, engineering data, sizes, and dimensions.—INGERSOLL-RAND CO., 11 BROADWAY, NEW YORK 4, N. Y.

Masonry Anchoring Devices—Complete line of masonry anchoring devices and allied products is listed in Bulletin 120. The bulletin contains a complete listing of each unit in the line including data on the sizes in which each are available, cost, weight, and other pertinent information. Each unit is illustrated, and diagramatic sketches illustrate its use and features.—U. S. EXPANSION BOLT CO., 621 STATE ST., YORK, PA.

Government-Bids Digest—Daily listing of the needs of government bureaus seeking bids on construction work is now available. Coupled with the listing is a service providing information on when and how to bid and how to avoid common mistakes. The Trilane Daily Construction Bulletin lists two basic points of information: What the government bureaus seek; and what are prevailing costs for this type of work.—TRILANE ASSOCIATES, 1 HUDSON ST., NEW YORK 13, N. Y.

Rear-Dump Euclids—Catalog 151 describes the Model IUD rear-dump Euclid. This unit is powered by a 125-hp diesel and has a payload capacity of 20,000 lb. The 8-p catalog describes the model in detail and contains illustrations and specification data.—THE EUCLID ROAD MACHINERY CO., CHARDON ROAD, CLEVELAND 17, OHIO.

Service of Hydraulic Brakes—Hydraulic-brake fluid service bulletin (HU-17-H) contains latest information and detailed instructions on service of braking systems. Diagrammatic sketches and illustrations show how to check, drain, flush, refill, and bleed the system. Tools and equipment necessary to speed up and satisfactorily service hydraulic braking systems are illustrated and thoroughly explained.—WAGNER ELECTRIC CORP., AUTOMOTIVE DIV., 6364 PLYMOUTH, ST. LOUIS 14, MO.

Hi-Up Truck Mixers—Current models of Worthington-Ransome Hi-Up truck mixers and agitators are described in Bulletin R-1700-B3. This 20-p bulletin contains pictures and explanations of such features as the main frame, transmission, clutches, trunnion bearings, chain drive, water system, water and flush tanks, drum head, and drum rollers. Manufacturing techniques are discussed.—WORTHINGTON PUMP & MACHINERY CORP., HARRISON, N. J.

Ice Control—Selection of abrasives and procedures for their most efficient treatment, storage, and handling are described in a booklet entitled, "Calcium Chloride for Ice Control". This booklet contains data from reports of the American Road Builders' Association and the Highway Research Board.—CALCIUM CHLORIDE ASSN., 909 RING BLDG., WASHINGTON 6, D. C.

Hardfacing and Repair—Welding products for hardfacing and repair are described in this catalog. Bulletin

(Continued on page 127)

Ant's-eye view of

SOUND CONSTRUCTION

Made for LONG SERVICE LIFE with LESS MAINTENANCE

Amcreco *Lowry Process* **Creosoted Products**

TIMBERS PILES PLANKING
FRAMED BRIDGE TIMBERS
POLES CROSS ARMS CONDUIT
ADZED AND BORED CROSS TIES
BRIDGE TIES

Strength and durability in the basic foundation builds soundness into your construction jobs. That's why Amcreco Creosoted Products are selected from the soundest timber — pressure treated by an advanced technique based on the Lowry Process—to assure enduring, long-lasting bridge work and freedom from maintenance troubles. As an added benefit, Amcreco Creosoted Piles, Framed Bridge Timbers and Planking economize in first cost, permit speedier erection. For economical "life insurance" on your next bridge job, specify Amcreco.

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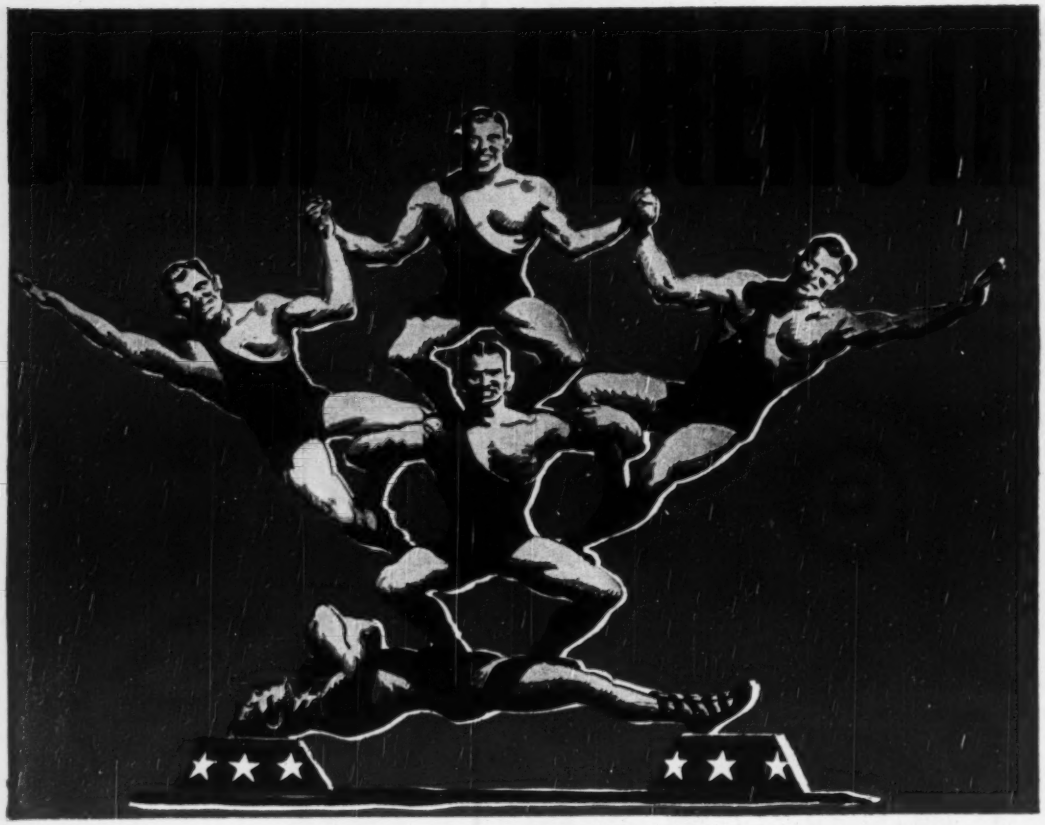


Without beam strength—or, for that matter—without all of the strength factors listed opposite—no pipe laid 100 years ago in *city streets* would be in service today. But, in spite of the evolution of traffic from horse-drawn vehicles to heavy trucks and buses—and today's vast complexity of subway and underground utility services—cast iron gas and water mains, laid over a century ago, are serving in the streets of more than 30 cities in the United States and Canada. Such service records prove that cast iron pipe combines all the strength factors of long life with ample margins of safety. No pipe that is provably deficient in any of these strength factors should ever be laid in city streets. Cast Iron Pipe Research Association, Thos. F. Wolfe, Engineer, 122 So. Michigan Ave., Chicago 3.

CAST IRON PIPE

Strength factors of Long Life!

No pipe that is provably deficient in any of these strength factors should ever be laid in city streets

BEAM STRENGTH

When cast iron pipe is subjected to beam stress caused by soil settlement, or disturbance of soil by other utilities, or resting on an obstruction, tests prove that standard 6-inch cast iron pipe in 10-foot span sustains a load of 15,000 lbs.

CRUSHING STRENGTH

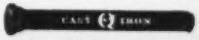
The ability of cast iron pipe to withstand external loads imposed by heavy fill and unusual traffic loads is proved by the Ring Compression Test. Standard 6-inch cast iron pipe withstands a crushing weight of more than 14,000 lbs. per foot.

SHOCK STRENGTH

The toughness of cast iron pipe which enables it to withstand impact and traffic shocks, as well as the hazards in handling, is demonstrated by the Impact Test. While under hydrostatic pressure and the heavy blows from a 50 pound hammer, standard 6-inch cast iron pipe does not crack until the hammer is dropped 6 times *on the same spot* from progressively increased heights of 6 inches.

BURSTING STRENGTH

In full length bursting tests standard 6-inch cast iron pipe withstands more than 2500 lbs. per square inch internal hydrostatic pressure, which proves ample ability to resist water-hammer or unusual working pressures.



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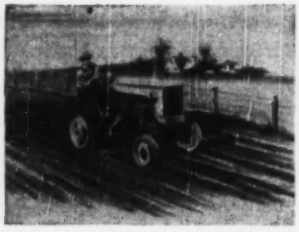
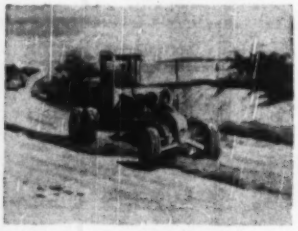
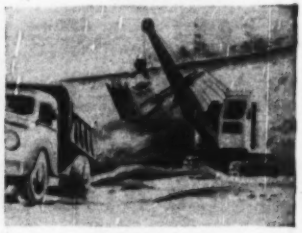
When a manufacturer of agricultural or industrial machinery decides to work with Clark, with a purpose to develop better equipment, a successful result is almost a certainty. That pooling of the experience and engineering facilities of two competent organizations has been tried many times; and without exception, effective teamwork has produced a machine of exceptional efficiency and long life.

A potent factor in these successes is the Clark Engineering Laboratory with its unsurpassed testing facilities—to prove that the new equipment will perform in actual service with the thorough dependability expected of it.

This sound collaborative service is available to you—with impressive evidence that it will benefit you as it has others. You'll find it "good business" to find out about it —no obligation, of course.







CLARK EQUIPMENT COMPANY, Buchanan, Michigan *Other Plants:* BATTLE CREEK AND JACKSON, MICHIGAN

PRODUCTS OF CLARK—TRANSMISSIONS FORK TRUCKS & TRACTORS AXLE HOUSINGS
GEARS AND FORGINGS RAILWAY CAR TRUCKS ELECTRIC STEEL CASTINGS
FRONT AND REAR AXLES FOR TRUCKS AND BUSSES METAL SPOKE WHEELS TRACTOR UNITS

650-W carries a description of the rods, electrodes, and other welding products manufactured by Amsco, listing their composition, properties, and typical applications. In addition, recommendations are made as to the proper rod for use on basic parts. Graphic comparisons are shown of the abrasive resistance, hardness, and impact resistance of the Amsco line.—American Manganese Steel Div., American Brake Shoe Co., 389 E. 14th St., Chicago Heights, Ill.

Files; File Procedure—"How to Simplify Your Files and Filing Systems" is the subject of a 40-p booklet. Pointing out that filing is really quite simple, the booklet charts the life cycle of a file, and shows the procedure to follow to handle it most efficiently. Emphasis is on simplicity and convenience of accurate filing conducted with adequate systems.—Remington Rand, Inc., 315 Fourth Ave., New York 10, N. Y.

Self-Priming Pumps—Bulletins now available describe the Rice 3-in. 15M self-priming centrifugal pump, as well as the 7M and 10M sizes. These catalogs describe the gasoline-engine power units, list the sizes in which each model is available, and lists the types of drives available. Special features are described in detail.—Rice Pump & Machine Co., 1023 S. 40th, Milwaukee 15, Wis.

Rust Prevention—Industrial rust prevention is explained in detail in a new catalog. Directions describe the use of Rust-Oleum on iron and steel under various conditions of exposure. Sealers for other materials are also described. — Rust-Oleum Corp., Evanston, Ill.

Floor Resurfacer—Materials for patching or overlaying floors of all types is described in folder entitled, "No Floor Chopping". The folder describes the features of Stonhard Resurfacer, and explains its method of application. Application instructions are accompanied by photographs of a typical installation.—Stonhard Co., Dept. ENR, 1306 Spring Garden St., Philadelphia 23, Pa.

Report on Viscosity – New issue of "Lubrication" describes viscosity of lubricants, and shows how a discussion of this type is of value to all who have lubrication problems. The report covers all phases of viscosity—theory, as well as how the theory fits into everyday use. The book contains complete engineering data, accompanied by charts, diagrams, and photographs. —The Texas Co., 135 E. 42nd St., New York 17, N. Y.

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WHERE THE MONEY GOES—Superhighways like this one (the Detroit Expressway) cost money—how to get it is a state problem.

Interim financing for highways

Interim financing arrangements of three states aim at taking the pain out of that inevitable lag between the time of borrowing the money and the moment revenue-producing bridges and highways begin to contribute to their own amortization.

Under the old pattern of highway finance, states and municipalities assumed long term indebtedness many months before the first scoop of dirt had been moved on the project. High interest rates had to be met annually while the project was building, although no income was due for a period of several years while millions of dollars sat idly and expensively by.

Typical is the recent sale in Florida of tax exempt serial and term bonds for the financing of the $42,000,000 Jacksonville expressway and its two toll bridges across the St. John's River.

• **Too much money**—When the New York bond syndicate of Smith, Barney & Co. purchased the $28,000,000 issue (rates ranged from 1.7 to 2.6187% on the serial bonds and 2.6187% on the term bonds) the money was plunked right down on the barrelhead. Yet, between now and the opening, financing and amortization costs of this loan must be taken care of by a tax on gasoline in Duval County.

Thus Florida faces carrying costs on millions of dollars in idle money for a period of years. The state legislature, at the suggestion of the project's sponsor, State Senator John E. Matthews, has voted power temporarily to invest the money so it may work to meet its own carrying costs while held for final investment in the expressway. The effect will be to reduce the real rate of interest paid on this bond issue over the construction period.

• **A different approach**—The New York State Thruway Authority has a different approach. Late in September its chairman, Bertram D. Tallamy, announced purchase of two Grand Island toll bridges from the Niagara Frontier Authority and plans to complete 60 miles of Thruway approaches to the two bridges. The cost: $10,000,000.

The money, said Tallamy, was coming from 14 different banks located in Buffalo, Niagara Falls, Albany and New York City. The arrangement was made at one half of one percent for two years, on condition that at the end of that period, either long term securities will be made available to institutional investors, or state-backed bonds will be issued for the project.

The Thruway authority expects the state legislature to allow the issuance of state-guaranteed bonds at the end of the two-year period. Meanwhile, both the Equitable Life Assurance Society and the New York Life Insurance Co., have offered to purchase long-term bonds backed by toll revenues at 2⅞% in the amount of $5,000,000 each.

• **New Jersey has a balance**—A somewhat similar arrangement has been made by New Jersey's Turnpike Authority to finance construction of its 118-mile, tollway. A group of insurance companies has promised to purchase, as needed, $220 million of 3¼'s backed only by project revenues.

The interesting gimmick is that these companies keep on hand a balance against which the state draws. In the meantime, New Jersey pays only one half of one percent on the undrawn balance, which at this moment amounts to $170 million; $50,000,000 has been called in three steps, with a fourth draft expected before the year is out.

No mere side issue in the Florida bond flotation was the turnabout made by the state in issuing its securities. Presenting the obligations as tax-exempts during the period of the past few months when interest rates have been falling was lucky.

• **Catch a falling star**—Municipal interest rates have begun a spectacular retreat from June levels. Standard and Poor's in June reported average yields on tax exempts at 2.09%. Advent of the Korean crisis and return of high corporation and personal income taxation brought the August average on municipals down to 1.9%. This approaches the low figures of the war and postwar years when tax-free returns on municipals were attractive to investors at 1.64%.

Florida was prepared to pay interest up to 3.5%, according to J. Turner Butler, attorney for the Jacksonville improvement committee. This rate of interest seemed attractive in contrast with the 4% asked by the Reconstruction Finance Corporation. But by submitting its issue to competitive bidding during a period of falling interest rates on tax-exempts Florida realized savings of around $6,000,000 over the life of the bonds.

Florida's interest rate of 2.6% compares favorably with New Jersey's commitment at 3¼%, New York's tentative arrangement at 2⅞%, and the 3.4% Oklahoma plans to pay on its $31,000,000 of revenue bonds ('58-90) backed by revenues from the Oklahoma City–Tulsa tollway.

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At left, completed Step-Taper Pile. Center, filling the permanent steel shell with concrete after internal inspection. Right, driving the pile with rigid core.

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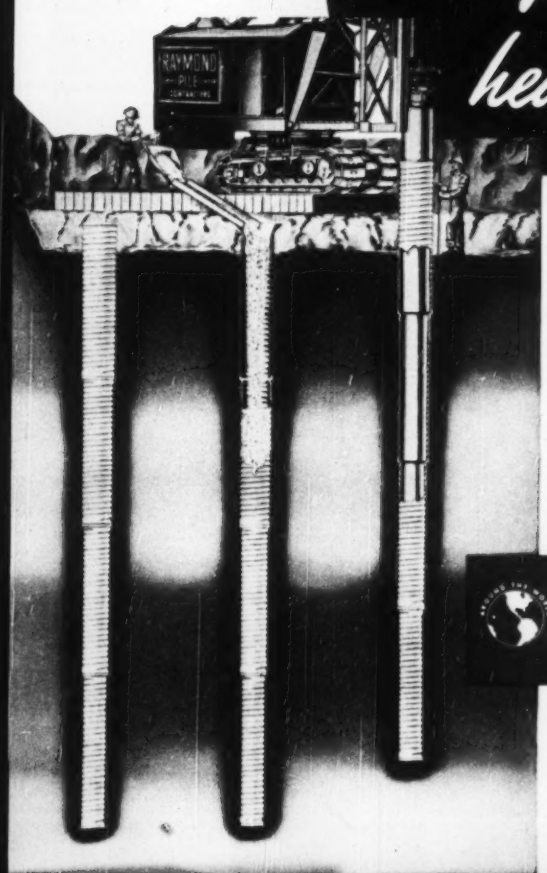

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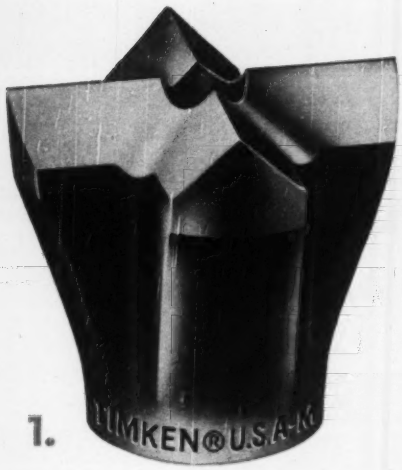

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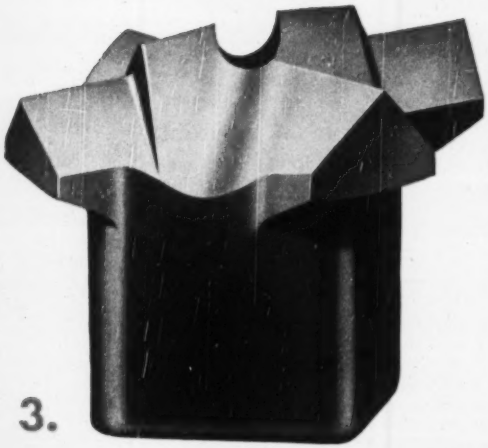

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